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Railway Age

SECOND HALF OF 1918—No. 9

SIXTY-THIRD YEAR

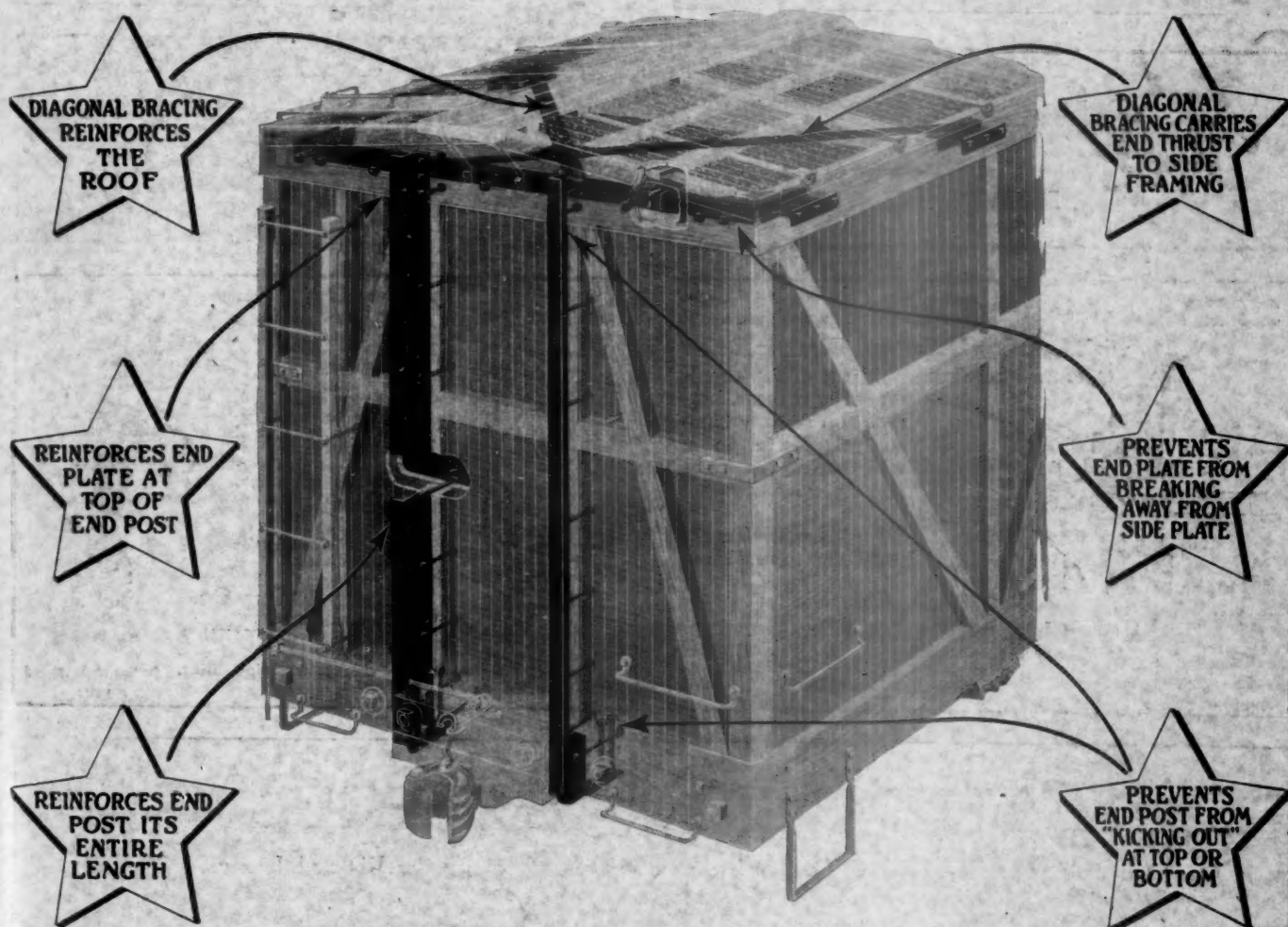
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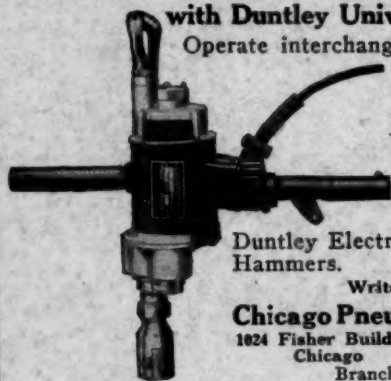
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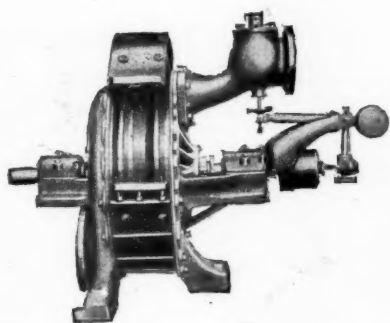
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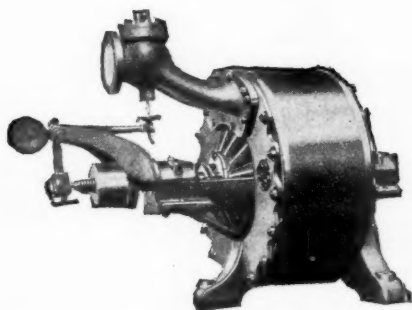
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Railway Age

Vol. 65

August 30, 1918

No. 9



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WE GUARANTEE, that of this issue 7,650 copies were printed; that of these 7,650 copies 6,864 were mailed to regular paid subscribers, 171 were provided for counter and news companies' sales, 300 were mailed to advertisers, 142 were mailed to employees and correspondents, and 173 were provided for new subscriptions, samples, copies lost in the mail and office use; that the total copies printed this year to date were 315,917, an average of 9,026 copies a week.

EDITORIAL

Railway Age

An operating officer tried hard to increase the capacity of his division; he gradually perfected his organization and

Have a Mark to Shoot At!

slowly increased its efficiency and capacity. He was far from satisfied, for he realized that there was still much to be desired, even though he was ahead of most of the other divisions. One day he had an inspiration. He had been at a rifle range and had become interested in a spirited competition. He went back to the office and drew up a schedule of records of achievements toward which his subordinates might strive. He made them fairly high, but not beyond attainment under favorable conditions. Then he quietly encouraged his men to try to break these records. Some of the men immediately got into the spirit of the game and made rapid progress. Others appeared to be indifferent, but sympathetic investigation showed that they were anxious to do better, but were in need of coaching and training in their duties. Others said: "What's the use. We will never be noticed and will not get any credit." A quiet and thorough educational campaign did much for the second class; a recognition of the good work of the leaders stirred up the indifferent and the laggards. Some men did not respond and gradually eliminated themselves from the organization. The division carried off all the honors for good records; the men were enthusiastic; the operating officer was promoted to greater responsibilities. This is a crude and simple tale, and yet it roughly marks the trail that will lead to success in any department.

The Property Protection Section of the Railroad Administration has formed

Police Work on the Chicago Terminals

the Chicago Railroad Police Commission to protect from theft and destruction property in the Chicago terminals belonging to the railroads or in their possession. The need for organization and effective work on the part of the police officers of the railways in Chicago is strikingly illustrated by some statistics which recently have been compiled. They show that during the month of July the Chicago railway police made 648 arrests. Of these, 148 were for felonies and 474 for misdemeanors. The number of convictions resulting was 443; and fines and costs were assessed amounting to \$4,085.31. The stolen property recovered was valued at \$12,000 and the total amount of property stolen from the railways in the Chicago district in the year 1917 is estimated at \$2,000,000. Since the Chicago Railroad Police Commission was organized it has broken up eight large gangs which were engaged in systematic robbery of railroad property. The situation disclosed is nothing less than appalling. The railroad police should receive the utmost co-operation from the courts in their efforts to break up the constant robbery of railroads and of railway patrons. Unfortunately, they do not receive such co-operation in Chicago, for the courts there are so congested with business that there are great delays in trying persons arrested for crimes on railway premises and many of them escape. Some of these cases are tried in the Illinois state courts and some in the federal courts. It seems desirable as a means of clearing the terminals in Chicago of criminals that a federal judge should

be designated whose sole function it should be to try cases arising from crimes committed there. The number of cases arising at present would be sufficient to keep one judge busy, and if, later on, he ceased to be busy it would be merely because the proceedings in his court had proved effective.

"You cannot win a battle with listless soldiers, or Hessians. You cannot get maximum production with listless work-

"Tons of Enthusiasm"

men, or outsiders. Wages, hours of labor, sanitation, and the rest of it, are important, but they are only batting and fielding averages. We must have enthusiasm and morale, tons of them." Thus writes Henry F. Hollis, member of the Committee on Education and Labor of the United States Senate, in the July number of The Annals of the American Academy of Political and Social Science. How can this ideal state be attained? By getting each man in the organization to realize that he is a real factor in the situation. Have him feel that his individual performance is being watched closely. Commend him for good work; educate and train him to do better if his performance is below par. Let him feel that you are interested in his success. Many railroad officers and industrial managers are entirely too sparing of words of approval or praise. We do not mean that these should be distributed carelessly or that any attempt should be made to "jolly the men." Rather should they be bestowed in the spirit that a French general distributes the *croix de guerre*—a distinction that men will freely and cheerfully risk their lives to attain. The United States Railroad is a tremendously big machine. Much attention is being given to equipment, facilities, methods and practices. What it needs even more than these things is "tons of enthusiasm." We have suggested how it may be obtained; it is necessary, however, that it should begin at the top and work downward, thoroughly saturating the entire organization. There is no other way in which it can be developed.

The sub-committee of the Senate Military Affairs Committee which has been investigating the airplane situation has made its report. While admitting that much

How About the Standard Cars and Locomotives?

good work has been accomplished, it stated that "it must nevertheless be admitted that our airplane program has, up to the present, presented many aspects of failure." After outlining the mistakes which have been made, it gave the following reasons as its opinion for the disappointing results:

"That the airplane program was largely placed in the control of the great automobile and other manufacturers who were ignorant of its practical problems.

"These manufacturers undertook the impossible task of creating a motor which could be adapted to all classes of flying craft. It is not too much to say that our airplane program has been largely subordinated to the Liberty Motor.

"We failed at the beginning of the war to adopt the common sense course of reproducing the most approved types of European machines in as great numbers as possible. This should have been carried on coincident with the production

of the Liberty Motor. This sound policy has very recently, but after a lamentable lapse of time, been adopted."

The Increase of Railway Expenses

IN AN EDITORIAL in its issue of August 9, entitled "The Causes of Increases in Operating Expenses," the *Railway Age* estimated upon the basis of statistics then available, that the increase in the operating expenses of the railways in the first six months of 1918 would be approximately \$520,000,000, or at the rate of \$1,040,000,000 a year. The statistics of the Interstate Commerce Commission regarding earnings and expenses during the six months ended with June 30 are now available. Large as our estimate was, the statistics of the Commission indicate that the increase in expenses during the year will be still larger. The increase in the expenses of the large roads during these six months, as shown by the Commission's figures, was \$462,000,000. It would appear, however, that this includes only \$133,000,000 for advances in wages made since January 1, and that, therefore, about \$329,000,000 of the increase in expenses was due to causes other than advances in wages. At this rate, the increase in expenses during the year from causes other than advances in wages would be about \$660,000,000. The director general, in a statement issued by him last week, estimated the advances in wages which have been made "recently"—which doubtless means since he came into power—at \$475,000,000 per annum. This, added to the other probable increases of operating expenses, would make a total increase during the year for the Class I roads alone of approximately \$1,135,000,000.

On the whole, it would appear now that an estimate that the increase in operating expenses in 1918 will be \$1,200,000,000 for all roads would be conservative, even though there were no further advances in wages or in the costs of materials and fuel. The expenses being incurred in the maintenance of the "overhead" organization of the Railroad Administration are not as yet being included in the operating expenses of the railways, and when they are included they will add somewhat more. Already the increase in expenses is running at a rate which exceeds the maximum compensation which the Railroad Control Law would permit to be paid to the railway companies for the use of their properties. The need for the large advances in freight and passenger rates which have been made by the director general is being clearly demonstrated. In fact, it is becoming questionable whether the advances in rates which have been made will prove sufficient to offset the advances in expenses.

Commission Warranty in Contracts with Railways

IT HAS NOT YET BEEN determined whether the Railroad Administration will continue to insist upon inserting in contracts with it the warranty regarding the non-payment of commissions which was quoted in an editorial in the *Railway Age* of August 2, entitled "An Indefensible Contract Warranty." We still believe that when officers of the Administration are brought to a full appreciation of the effect its insertion in contracts for the purchase of railway equipment and supplies would have on many legitimate businesses they will agree to modify it in important respects. The warranty as originally drawn would prohibit any manufacturer from paying commissions to any person or concern for selling goods to the government, which includes the railways while they are being operated by the government. As has been pointed out before, railway supply concerns have sometimes sold their goods through salesmen employed on a salary basis, sometimes through salesmen employed

on a partly salary and partly commission basis, and sometimes through persons or concerns representing them entirely on the commission basis. In most cases their arrangements with those representing them on a commission basis have been as permanent and as public as their employment of those who have been representing them on a salary basis.

The Railroad Administration cannot gain anything for the government by stopping the sale of railway supplies on the regular commission bases which have prevailed in the past, for the prices the supply companies have charged the railways practically always have been the same whether the goods were sold by men working on salary or by men working on commission. It may be said, however, that it is necessary to prohibit sales upon commission because in some cases persons selling goods to government departments on a commission basis have secured large commissions and added them to the prices of the goods, thereby making the prices excessive. But to destroy all business done on a commission basis merely to stop the abuse of the commission method would be like burning a barn to rid it of rats that infested it. The proper way to stop an abuse is to adopt some means directly adapted to stopping it, and it alone. The use of illegitimate methods of doing business is no greater an abuse than the destruction of legitimate methods of doing business in an effort to stop the use of illegitimate methods. The right way to get out of the difficulty presented seems plain enough. This is simply to prohibit the payment of commissions except to agents or agencies regularly and publicly employed by the concern selling the goods, and to provide that the prices paid for goods sold by a concern on a commission basis shall not be greater than those paid to it for goods sold by its regular salaried salesmen.

The Death Knell of Piecework

BY GUARANTEEING a minimum wage of 58 to 68 cents an hour to car and locomotive workers, respectively, without providing a proportionate increase in the piecework rates, the Railroad Administration practically sounded a death knell to the piecework system in railway shops. The difference between what the men can now earn by working on a piecework basis and what they are guaranteed on a day work basis is too small to pay for the extra effort it will take to make piecework profitable. It will be well briefly to analyze just what this means. It is, of course, understood that wages were increased for the purpose of holding the shopmen the railways now have and of attracting additional help, in order that the output of repaired cars and locomotives may be increased. The condition of cars and locomotives today is such that a full complement of men is required. In fact, it is impossible to obtain enough men to put the equipment in proper shape. Freight cars were never in such poor condition. Increased production only will solve the problem. By eliminating piecework from a shop the output per man will be decreased. It is a generally accepted fact that the output of the same shop will be about 33 per cent greater when the men are working on a piecework basis than on a day-work basis. This means that for the same output more men will be required; shop facilities will have to be increased and additional machine tools purchased in order to accommodate the increased number of men. The cost of the work will be greatly increased. It would seem, therefore, that a part of the increase in production which was sought for by the increase in wages will be neutralized by the automatic elimination of piecework. Would it not have been wiser, and is it yet too late, to raise the piecework rates to correspond to the increase granted the day worker in order that an incentive may still be provided for the workman to increase his output?

Increased Movement of Essential Traffic

THE STATISTICS of the Railroad Administration indicate that the railways handled no more freight in the first six months of 1918 than in the corresponding months of 1917. There was some increase in freight earnings, but this was due to higher freight rates.

It does not, however, follow, because the railways handled no more freight of all kinds, that they did not render more useful service to the public than they did last year. It is conceivable that they might handle more freight of all kinds and yet handle less of the kinds that it is essential to have transported in order to provide the consuming public with necessities and enable the government effectively to carry on the war. The thing which it is most important for the railways to do now is not to handle more traffic of all kinds, but to handle more of the kinds which it is most essential in the present crisis to have moved.

The records demonstrate that the railways have been doing this. Statistics compiled by the Railroad Administration show that in the month of January there was a decline of 79,172 in the number of cars of coal loaded. There has been an increase in the number of cars loaded in every month since then, varying from 31,000 to over 113,000, and up to and including the week ending August 19 the increase in the number of cars loaded as compared with last year was 417,861. This is equivalent to an increase of about 23,000,000 in the number of tons loaded.

Next to coal to keep American factories going and American homes warm there is nothing it is more essential should be transported in increased quantities than foodstuffs. The farmers of America must during the war supply not only the tables of the homes of America, but also the armies of the United States abroad, and, to a large extent, the civilian populations and armies of our allies. Statistics compiled by the Railroad Administration show that from July 6 to August 17 the number of cars of grain loaded in the United States was 197,428 as compared with 134,604 in 1917, an increase of 62,824.

In addition to being called on to transport a larger amount of essential freight, the railways have had to handle a vast military passenger traffic. The increase in passenger earnings during the first six months of the year was much larger relatively than the increase in freight earnings, and this was chiefly due to a large increase in the amount of both civilian and military passenger traffic. From January 1 to June 30, 1918, the railways handled 3,169,587 soldiers. Of these 1,895,476 were transported in 4,323 special trains. The average number of passengers per train was 439 and the average distance each train ran was 934 miles. The total number of troops handled between May 1 and December 31, 1917, was 2,218,432, and the total number of troops handled from May 1, 1917, to August 22, 1918, 5,377,468.

The railways under government control have not been able to show any such record-breaking increases in the amount of freight handled as they showed during the first six months they were operated under the direction of the Railroads' War Board. Many anticipated that by the mere expedient of adopting government control they could be made to handle a vastly increased business. That they have failed to do this is not a reflection upon the Railroad Administration, but upon the knowledge and judgment of those who anticipated a different outcome. Every day which passes makes it clearer that the railways under the Railroads' War Board were operating close to their maximum capacity with the facilities they had, and that the only way they can be made to handle much more traffic is to enlarge their facilities.

It would be dangerous for the Railroad Administration and the public to assume that the satisfactory transportation conditions which have existed for some months will last much

longer. There always has been, and probably will be this year, a large increase in freight business in the fall and winter. Furthermore, weather conditions at that time always become adverse to satisfactory operation. It is not to be expected that weather conditions will be so bad as they were last winter. The severity of the weather at that time is illustrated by the fact that one of the principal eastern lines spent as much money for clearing snow and ice as it did during the preceding six winters combined. Nevertheless, unless next winter is far more open than usual the organization, resources and facilities of the railroads will be put to a very severe test. Whether the organization the director general has created will prove better able to cope with the situation than did that created by the railways under private management remains to be seen. Unfortunately, there were great delays by the Railroad Administration in placing orders for cars and locomotives, and but little of the equipment ordered by it will be available for use when it is most needed. This will increase the difficulty of the task of the transportation officers. But the Railroad Administration, unlike the Railroads' War Board, can adopt any measures it may see fit to control and direct the movement of traffic or to entirely exclude any part of the traffic from transportation; and this will be of very great advantage in dealing with the situation.

Atchison, Topeka & Santa Fe

WHEN E. P. RIPLEY came to the Atchison, Topeka & Santa Fe on January 1, 1896, Aldace F. Walker was chairman of the board and the road had but recently been in the hands of Mr. Walker as receiver. The map shows the Santa Fe as it is today, but with those lines which have been added since 1896 shown cross hatched. A close study of this map will well repay anyone who is interested in the development of American railroads. Space will not permit of a chronological account of the acquisition or building of these lines further than to say that the first important acquisition was the Santa Fe & Pacific which runs from Albuquerque, N. M., (near Belen) to Mojave, Cal. (between Barstow and Kern Junction), with lines extending to Los Angeles and San Diego, and the relinquishment of the Sonora system, so-called, which was a collection of lines totaling about 350 miles and extending from Benson, Ariz., via Nogales to Guaymas, Mex. These lines are not shown on the map because they have not been operated by the Santa Fe since 1897 and are now part of the Southern Pacific's Mexican lines. The map does not show the double track work which has been done since 1896, but roughly the Santa Fe is double tracked from Chicago to Hutchinson, Kans.; that is the whole main stem is double tracked.

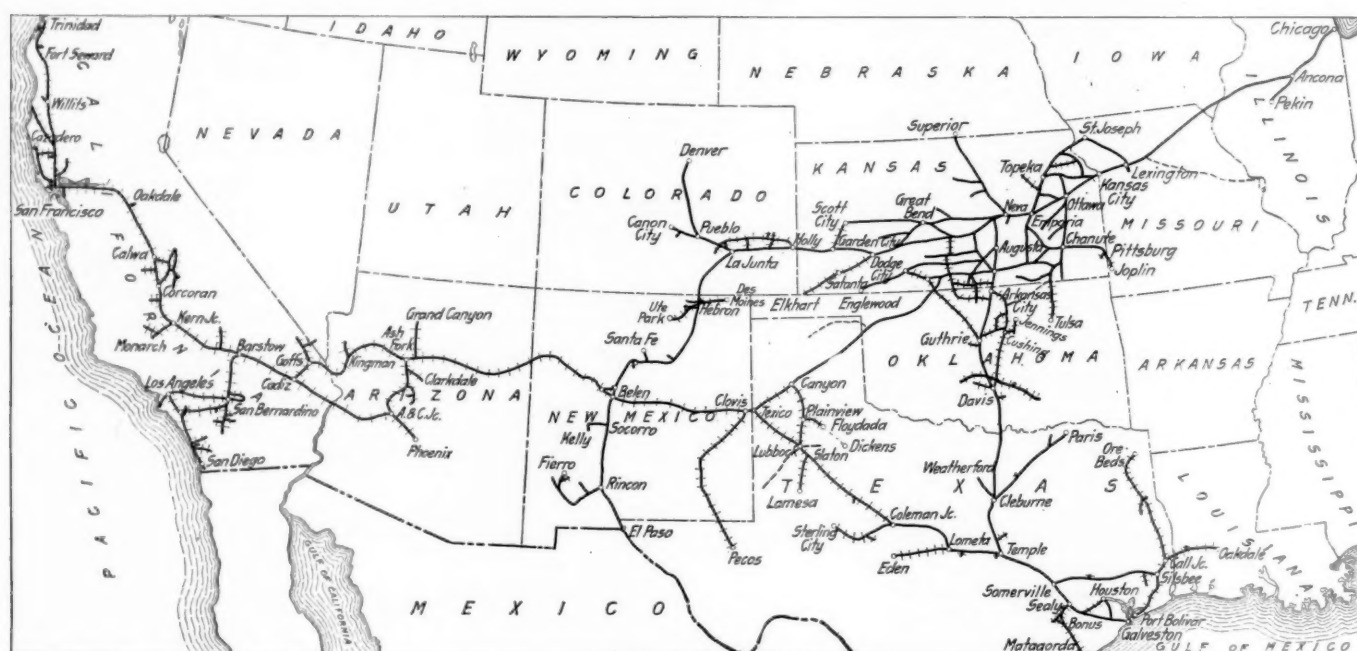
The map cannot show the grade reduction work that has been done since 1896, nor is it within the scope of these comments to go into detail as to the physical additions and betterments which have been made on the Santa Fe in the last 21 years. But the following passage taken from President Ripley's annual report for 1898, after the Santa Fe & Pacific had been taken over, throws so much light on the policy which has guided the development of the system in these twenty years, that it is well worth reading over. "When the Santa Fe & Pacific purchase was made the physical condition of the property was not up to the Atchison standard and it was fully realized that large expenditures would be necessary in order to rehabilitate it These improvements, among other things, included new rail upon the entire line except short sections which were relaid during the receivership; also considerable widening of banks and quite a large amount of ballasting and steel bridge work. Much of the cost of these betterments has been charged to current operating expenses" And again, speak-

ing of old lines east of Albuquerque, President Ripley in the same report said: "It has seemed wise to your directors to take advantage of this year of large gross income to prepare for the possibility of less favorable conditions in the future by continuing the work of putting the property into condition to be operated with the maximum of economy. It will be noticed that the large expenditure made has been made generally for betterments 'under maintenance of road and structures' and 'maintenance of equipment'" (expenses, not capital account).

It will well repay anyone who has available a map of the Chicago, Rock Island & Pacific for the year 1896, to get it out and compare it with the map of the Atchison, exclusive of those lines shown cross hatched on our map. In other words, to compare it with the map of the Santa Fe in 1896. The two maps, the Rock Island and the Santa Fe in 1896, are strikingly similar. Both show a railroad system extending from Chicago via Kansas City to Colorado and into the southwest, each system having a line down into Texas. The most striking difference is in the fact that the Rock Island line in the southwest extended only as far as the Kansas southwestern border, while the Santa Fe extended to the cen-

doubt when in the opinion of a good many shrewd students of railroad history the difference between the success of the Santa Fe and the failure of the Rock Island is the difference between the genius of Mr. Ripley and the lack of genius of the Rock Island management.

In the calendar year 1917 the Santa Fe did much the largest business in the history of the property. The operating revenue (exclusive of other income) amounted to \$165,530,000, an increase over 1916 of \$21,240,000. Operating expenses amounted to \$105,223,000, an increase of \$16,805,000. The increase in taxes, however, was out of proportion to the increase in expenses; taxes in 1917 amounted to \$11,932,000 comparing with \$6,768,000 in 1916. After payment of interest charges and rentals the company had \$38,186,000 available for dividends which was only a few thousand dollars more than was available in 1916. The five per cent dividend on the preferred calls for \$6,209,000 and the six per cent dividend for 1917 and the first quarterly dividend of 1½ per cent for 1918, both of which were paid out of the earnings of 1917, call for \$16,486,000. The company appropriated \$8,348,000 for investments in physical property from earnings. The total additions and betterments including



The Atchison, Topeka & Santa Fe

The solid black line shows the system as operated in 1896 before the taking over of the Santa Fe & Pacific and the crosshatched lines are those added or acquired since 1896.

tral part of New Mexico and the Texas Line of the Rock Island extended only to Fort Worth (an inland cattle center), while the Santa Fe reached the gulf at Galveston.

It would be difficult indeed to measure in millions of dollars the value which has been created for the country served and the stockholders of the Atchison, Topeka & Santa Fe by the wisdom shown by Mr. Ripley in his development of this railroad property. Even under E. P. Ripley the Rock Island might or might not have been capable of such development as that of the Santa Fe, but the fact remains that under Mr. Ripley the Santa Fe system was developed to the 11,284 miles of railroad shown on the map with earnings of \$169,423,000 in 1917—a net corporate income for the payment of interest, taxes and rentals of \$38,186,000, or the equivalent of 15 per cent on the common stock after the payment of regular five per cent dividends on the preferred. Is it surprising that some of the older railroad men and bankers look at the taking over of the transportation system of the United States by the government officials with something of

those paid for out of earnings and those charged to capital account and including also the cost of the acquisition of new mileage was \$26,156,000.

The big increase in expenses in 1917 was in the out-of-pocket cost of moving the business (transportation expenses). These expenses amounted to \$51,932,000 in 1917, an increase of \$11,520,000. It is rather interesting to note which of the primary accounts in transportation expenses show the largest increases. These accounts were, wages of station employees, wages of yard conductors and trainmen, fuel for train locomotives, engine-house expenses, and loss and damage to freight. It is interesting, also, to note that the wages of train engineers and of trainmen are not included in this list. Train engineers were paid \$5,785,000 in 1917 as against \$5,040,000 in 1916, and trainmen \$5,856,000 in 1917 and \$5,059,000 in 1916. Substantial increases in both cases are not proportionate to the increase in other accounts mentioned.

The total ton mileage handled in 1917 was 12,906,000,000. This compares with 11,136,000,000 ton miles handled in

1916. The train load of all freight averaged 520 tons in 1917, as against 486 tons in 1916. The number of passengers carried one mile totaled 5,553,000 in 1917 as compared with 1,363,000 in 1916.

In 1917 there was a much smaller tonnage of agricultural products carried, especially corn and wheat. The total tonnage in 1917 was 6,218,000, comparing with 7,356,000 in 1916. The percentage of the total tonnage carried furnished by agricultural products was 17.46 in 1917 as against 22.13 in 1916. On the other hand, the tonnage of products of mines and of manufactures both show large increases. Products of mines furnished 15,500,000 tons in 1917 and 13,885,000 tons in 1916.

When the government took the Santa Fe and other roads over, the company had \$38,363,000 cash on hand and no loans and bills payable.

The following table shows the principal figures for operation in 1917 as compared with 1916:

	1917	1916
Average mileage operated.....	11,284	11,259
Freight revenue.....	\$116,907,908	\$102,732,152
Passenger revenue.....	35,834,528	30,476,909
Total operating revenues.....	165,529,519	144,290,238
Maintenance of way and structures.....	20,162,853	19,694,833
Maintenance of equipment.....	27,153,323	22,657,797
Traffic expenses.....	2,758,804	2,714,714
Transportation expenses.....	51,932,093	40,411,952
General expenses.....	3,542,175	3,176,803
Total operating expenses.....	105,552,878	88,413,487
Taxes.....	11,932,361	6,768,156
Operating income.....	49,077,594	48,346,700
Gross income.....	52,240,229	52,555,449
Net income.....	38,185,547	38,122,189
Dividends.....	22,694,087*	†
Appropriated for investment and physical property	8,348,180	†
Surplus.....	7,057,000	†

*This includes the first quarterly dividend on the common stock for 1918, declared out of 1917 earnings.

†The Atchison, Topeka & Santa Fe changed its fiscal year from the period ending June 30 to the period ending December 31. The figures, therefore, for dividends and surplus on the calendar year basis are not available prior to 1917.

Brooklyn Rapid Transit

MANY OF THE CONDITIONS which have affected steam railroad operation prior to the assumption of control by the government were also in 1917-18 affecting the operation of street and interurban railways. With the street railways, however, the labor problem was even more acute than with the steam railways. The class of labor employed on a system like the Brooklyn Rapid Transit is very largely unskilled labor and the increased demand and higher wage for unskilled labor has been greater proportionately than the increased demand and higher wage of many of the classes of skilled labor employed on steam roads. The Brooklyn Rapid Transit has, for a number of years, pursued a policy of enlightened self-interest in regard to its employees. It has had group life insurance under a plan by which the company paid the greater part of the cost for employees who had a certain record of service. It has made well directed efforts toward employees' welfare, especially in regard to providing restaurants in car barns where good food is served at a reasonable price entailing, of course, a loss to the company. The Brooklyn Rapid Transit was among the first of the larger street railway companies to recognize the higher cost of living by granting its employees a considerable raise based on this increased cost.

In the fiscal year ended June 30, 1918, it became absolutely necessary, in order to hold men, to give various increases throughout the year. At the close of the fiscal year the directors decided to make a large increase in the wages of men in the transportation department, feeling that street railway service of a certain standard was an essential to efficient war work as well as to the ordinary comfort and convenience of citizens generally. This increase will call for an additional expenditure of more than \$1,000,000 a year.

In 1918 the Brooklyn Rapid Transit earned \$30,506,000, an increase over 1917 of \$1,002,000. Operating expenses, however, in 1918 amounted to \$18,112,000, an increase of \$1,370,000, and, in addition, there was an increase in taxes and fixed charges of \$695,000, so that the net income for the year amounted to \$4,112,000 as against \$5,195,000 for the 1917 fiscal year. If no other increase in expenses took place than the \$1,000,000 in wages of men in the transportation department, it would so reduce the surplus that conservatism would require that no dividends be paid. As a matter of fact, however, the Brooklyn Rapid Transit paid only the first semi-annual dividend in 1917-18 and not only discontinued dividends in the second half of the year, but entered into an agreement not to pay any dividends either in cash or script during the time that its new notes, which it issued in 1918 and which are due in 1921, are outstanding. It would appear that Colonel Williams in his annual report states the condition of the company without the slightest exaggeration when he says, "We need more revenue, therefore, not for dividends—just as such an appropriation would be—but for bare necessities, made abnormally severe by conditions for which we are not responsible."

The Brooklyn Rapid Transit had \$57,735,000 six-year 5 per cent notes due July 1, 1918. It was found impossible to refund these notes through ordinary banking channels and the company, therefore, applied to the War Finance Corporation, which was created by Congress for just such occasions as this, for aid. Note holders were offered new three-year 7 per cent notes in exchange for their 5 per cent notes and could, if they chose, take 30 per cent of their holdings of old notes in cash instead of new 7 per cent notes. All but between 2 and 3 per cent accepted the plan; most of the note holders, however, taking 30 per cent in cash. This cash was advanced by the War Finance Corporation, and the Brooklyn Rapid Transit gave the corporation its new 7 per cent notes up to the amount advanced. In other words, partly through an agreement for renewal on the part of note holders and partly through the acceptance of Brooklyn Rapid Transit notes by the War Finance Corporation, the company was able to refund the six-year 5 per cent note with a three-year 7 per cent note of the same total face value. There is, therefore, an added interest charge of \$1,154,000 besides the increase of \$1,000,000 in transportation employees' wages.

The company has made a new agreement intended to take the place of the mortgage made in 1902, under which \$150,000,000 bonds could be issued, but the rate of interest on such bonds was limited to 4 per cent. Under the new mortgage, however, convertible or non-convertible bonds can be issued at rates of interest, which, in the opinion of the board of directors, will be most advantageous. It is planned to acquire or exchange outstanding bonds under the old mortgage for bonds under the new mortgage and the company already has in its treasury \$22,401,000 of these old 4 per cent bonds, representing expenditures made in accordance with the provisions of the mortgage and which, therefore, it is entitled to sell to reimburse itself, but which bonds bearing only 4 per cent interest are unsalable except at an undesirably heavy discount. As a matter of fact, there are only \$3,439,000 of the old bonds in the hands of the public.

The Brooklyn Rapid Transit under the so-called dual system of subways is to operate the Broadway subway in Manhattan, while the Interborough Rapid Transit operates the old subway running up Fourth avenue and also the new Seventh avenue subway which makes a second line from the Battery to 42nd street and Times Square on the west side of Manhattan.

The new system of subways is called the "H" system; there being a subway running on the east side of Manhattan Island from the Battery past the Grand Central Station at 42nd street to West Farms and beyond in the Bronx. On the west

side there are two subways from the Battery to Times Square and 42nd street and one from there on up Broadway to 240th street. There is to be a shuttle service between Grand Central Station and Times Square under 42nd street, forming the cross bar of the letter H. This system, incomplete as to stations and connections, was put into operation on August 1, but resulted in indescribable confusion, especially at the two ends of the shuttle service. The service under 42nd street was temporarily discontinued and the new system without the cross bar of the H is now in limping operation. The Brooklyn Rapid Transit is quite frank in its acknowledgment that the poor service on the Broadway line is partly due to incomplete stations and inadequate switching facilities, and in part to the incapacity of the Broadway subway to take care of the volume of traffic which now comes to it as transfer business from the Williamsburg bridge line under Canal street. The plan for the New York City subways calls for the building of other connections between Long Island (Brooklyn and Queens) and the Broadway subway, which building is to be done by the city; but until it is completed the congestion on the Broadway subway will presumably continue to be very bad.

It should be borne in mind that this Broadway subway is operated by a subsidiary of the Brooklyn Rapid Transit, the New York Municipal Railway. The earnings in 1918 from those portions of this subway which are open and the other parts of the dual system operated by the New York Municipal Railway amounted to \$13,057,000. After paying expenses and setting aside maintenance, there was \$4,760,000 available, out of which the company received its \$3,500,000 first preferential and the city was called upon to make up the deficit of \$406,000 to furnish the additional \$1,666,000 second preferential due to the company.

The consolidated balance sheet of the Brooklyn Rapid Transit system shows a total cost of road and equipment including surface lines, advances to lease companies and capital expenditures on the new subways, of \$215,153,000. The company has outstanding, including subsidiary companies' stock in the hands of the public, \$75,571,000 stock and \$119,589,000 bonds including the \$57,735,000 notes previously mentioned. On June 30, 1918, there was \$1,160,000 cash which was included in the total of \$4,027,000 current assets. The current liabilities amounted to \$9,463,000 in which there was included \$3,600,000 of bills payable secured by a deposit of Brooklyn Rapid Transit bonds as well as other bonds.

Even in comparison with a large steam railroad, the business of the Brooklyn Rapid Transit is impressive. In 1918, the total number of passengers carried was 771,044,000. The average earnings per passenger was 3.82 cents. The total mileage of first track operated was 249 and of second track 238 on the surface lines alone, and, in addition, there are 74 miles of Rapid Transit lines of double track, of which 31 miles has third track and 18 miles fourth track.

The Brooklyn Rapid Transit is asking the New York Public Service Commission for an increase in rate of fare which it may charge. It hardly needs profound mathematics to prove that if the 5 cent fare was not unduly high in 1912 or 1913 it is now unduly low. Much has been said about the inconvenience of a 6 cent or 7 cent fare and yet, as a matter of fact, in such cities as Washington, D. C., where six tickets are sold for a quarter by the street railway companies, the vast majority of people buy strips of tickets and apparently find no inconvenience in so doing. It would seem that tickets could be sold in strips costing even multiples of 5 cents at a price which would make the tickets between 6 and 7 cents and place no great hardship on the public, and avoid the universal use of pennies in connection with nickels for street car fare and afford the Brooklyn Rapid Transit and other similarly situated companies the relief which is apparently essential.

Letters to the Editor

Dislocated by Allocation

TO THE EDITOR:

We have just been advised by the purchasing committee of the Railroad Administration at Washington, that our material has got to be "allocated." We have always put the best material that we knew how into our device. It has stood every M. C. B. test, and we don't think it fair that it should now be subjected to some newfangled kind of a test.

We confess that we do not know what this test is. We have asked Harry Frost and he says that it should really be spelled alloycated; that it means an alloy of Titanicum and German Vandalism without any bitters. It all depends upon the Mix. We submitted this opinion to Murph, and he says that this is one case that has nothing to do with the Micks; that viewing it from one standpoint, it is ineffable and from another standpoint it depends upon the personal equation. After getting these two expert opinions, we decided to take a firm stand in regard to it and have advised the committee that they can allocate one in every thousand and if it passes the test then they will have to take the balance just as they run.

We had to sell our device to the committee upon the arrangement that the price should first be fixed by the American Iron and Steel Institute, and then be reviewed by the War Industries Board and passed upon by the Council of National Defense, with the further provision that if it should be found that at any time before this, or at any time afterwards anybody had ever sold or should sell one of these at a lower price, then we would adjust our price accordingly, and that in arriving at the price, the wheat crop in Nevada should be taken into consideration. We do not think it fair, therefore, that after the deal is all closed up and the price absolutely fixed as above mentioned, the committee should come in and insist upon allocating our device. We are afraid it will not stand it.

A LOQUACIOUS ALLOCATEE.

Tenders of U. S. Standard Freight Locomotives

CHICAGO, Ill.

TO THE EDITOR:

The description of the first United States standard locomotive, Baltimore & Ohio No. 4500, given in your issue of July 19, indicates that for freight locomotives, at least, the United States Railroad Administration has not yet considered the advisability of adopting a flexible type of truck, such as is generally used under passenger engine tenders, passenger train cars and cabooses, that can safely negotiate all road and yard tracks without liability of derailment.

This recalls the investigation made by H. W. Belnap of the Interstate Commerce Commission, of a wreck that occurred during October, 1913, and in which 17 passengers were killed and 139 passengers and 6 employees injured as the result of the derailment of the forward truck of an engine tender. Mr. Belnap found that on account of the comparatively short wheelbase, high center of gravity, and movement of water in the cistern, surging back and forth from side to side, the tender was subjected to overturning and derailling forces which are aggravated by any irregularity that exists in the tracks.

The amount of attention that has been given to the subject of tender derailments by railroad officers and committees

of the different railway associations during the past 20 years for the purpose of overcoming this serious item of hazard in railway operation, has resulted in many railways of the United States adopting the general foreign practice of a flexible type of tender truck which makes it possible for each wheel always to follow the rail with which it is in contact and without regard to any other wheel in the truck. Such an arrangement avoids the possibility for derailment which occurs where a wheel momentarily relieved of its usual load on soft and irregular track is combined with a type of truck having the journal boxes on each side rigidly connected to the side frame such as is used under the Railroad Administration's Mikado for the Baltimore & Ohio.

Heretofore, on those railroads where excellent track conditions were at all times maintained, it has been possible to operate engine tenders having rigid trucks with few, if any, derailments, but this has been impossible on lines having considerable curvature over rough country where proper track conditions cannot at all times be maintained due to the nature of the sub-grade, or on account of frost, rain or floods affecting the ballast and roadway.

The change in laying track with rails having stagger instead of square joints, has also brought about a great deal of vibration and surging of the tender, such as Mr. Belnap referred to when the track rails are not in first class surface and alinement, all of which tends to cause derailment of rigid types of tender trucks.

Now that locomotives, particularly freight, are being used in all parts of the country with all sorts of track, rail, ballast and other variable conditions, it is more important than ever that tender trucks should be designed so that there will be the least possibility for derailment, and it is for that reason that I am bringing this matter to your attention with the suggestion that it be brought before the proper officials and committees of the U. S. Railroad Administration for their serious consideration, and with the hope that the director general in his plans for unification and standardization, will provide freight and switch locomotive tenders having the same degree of safety for operation as he has given us in the United States standard passenger locomotives.

TRAVELING ENGINEER.

Why Tank Engines Are Not Used in America

NEW YORK CITY.

TO THE EDITOR:

It is with much interest that I have read the communication of Mr. Bolam in your issue of July 19, and two letters on the same subject—Tank Engines—in the issue of July 26. A discussion of the tank engine in the United States today is chiefly of interest from a historical point of view, but it is extremely interesting. As Mr. Bolam states, he has been astonished in the past years that the American railway man did not see or realize the advantage of tank engines for particular service. In England it is accepted that a tank engine is better adapted to all passenger service up to 50 miles, and on English colonial railways and foreign railways controlled by English capital, the tank engine has larger usage, not only for short runs, but as road engines and particularly for what the Englishman calls "bank" engines, or helpers.

Very few lines in the United States have used tank engines to avail themselves of the advantage such engines afford of doing away with turning at the end of the run. The elevated lines in New York did this, and most of the English lines do it. The Boston, Revere Beach & Lynn does not do it. The reason given is that when a tank engine is running backwards, the engineer has to read his signals from the left hand side. Then again some tank engines in this country have been built with such high tanks that the engineer can-

not see over them to advantage at all times. Owing to the large boiler demanded by the American service, it is not possible to get side tanks of much size on engines which might be built now. The New York Central type has the tank in the rear. The point has been raised in America against tank engines that they are not so easy to get at in making repairs, but I am doubtful whether this argument is of much value. As Mr. Bolam states, the tank engine can give additional traction when it is loaded, starting from the terminal, but this advantage has been used in America as an objection by saying that there was not a uniform traction.

In conclusion it may be stated that prejudice and lack of knowledge of the advantages have been the leading reasons for such a small use of this form of power, and it is not likely, for the reasons which I have stated, that there will be many tank engines built in this country in the future.

GEORGE B. LEIGHTON.

Vestibule Cabs for Locomotives

NEW YORK CITY.

TO THE EDITOR:

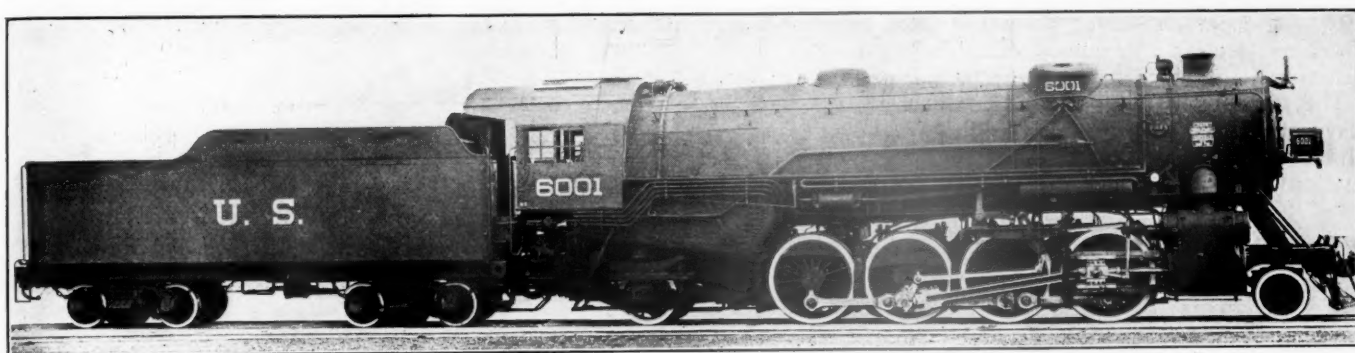
Permit me to endorse the timely editorial in your issue of August 16 on the subject of vestibule cabs. The passage of the law in regard to them proves nothing beyond the fact, already known, that legislators should not be permitted to interfere with locomotive design. What is, however, of considerable interest in this connection, is the fact that the idea involved is by no means new. The plan of using side doors on locomotives other than those of the tank type was tried nearly half a century ago, and, after a more or less checkered career, finally abandoned. Old switchers on the Chesapeake & Ohio, the Pennsylvania, the Buffalo, Rochester & Pittsburgh and some other roads had such an arrangement, but are not heard of today. Of course, the average politician could not be expected to know this, and that is one of the very reasons why he should keep his hands off in cases of this kind.

The American style of cab has long been the safest and most comfortable in the world, and is the product of years of experience and trial. It was designed to provide ample protection from the elements, while affording proper ventilation in the summer, which, as we all know, is very hot in this country. All attempts to change its basic design have failed so far because modifications proved troublesome and ineffective. Years ago the Long Island tried a sheet iron hood over the gangway which made things hot for the crew in summer and cold in winter, and, to cap the climax, shook the cab to pieces! The order then came, "Take 'em off!" No doubt, if railroad "regulation" had been such a thriving business in those days, the legislature would have passed a law enforcing their continued use!

One of the arguments advanced in favor of the vestibule cab is the assertion that it would save firemen from being flung out the gangway. I ask, in all earnestness, what the men who have handled a "scoop" in their day think of such nonsense, and how they can explain their present hale and hearty condition since, if the vestibule contingent is right, they ought to have been dead long ago!

It must be remembered that speeds of 60 or 70 m. p. h. were made 25 or more years ago, and that the locomotives of that period did not ride as smoothly as the heavy Pacific of today. What, then, becomes of this preposterous argument? And what of the men—bless their hearts—who have survived to disprove it? The enforced introduction of vestibule cabs at this late day would involve a senseless and useless expenditure of money that is needed for practical purposes. About all it would accomplish would be to give locomotives a peculiar appearance. Perhaps that is what our novelty-seekers really want.

ARTHUR CURRAN.



The U.S. Standard Heavy Mikado Type Locomotive

The First of These Locomotives Was Recently Completed by
the American Locomotive Company

THE FIRST of the 157 standard locomotives of the heavy Mikado type to be built for the United States Railroad Administration, has been completed at the Brooks works of the American Locomotive Company. The heavy Mikado type is the second of the standard types to be placed in service, locomotives of the light Mikado type having already been built.* With the exception of the light Mikado type, of which 575 have been ordered, the 157 engines of the heavy Mikado type constitute the largest number of any of the other standard types which have been ordered this year.

The design of the heavy Mikados, like that of the light Mikado type, adheres closely to well established practice and is conservative both in the proportions and in the design of details. As far as practicable, interchangeability of details has been maintained between the various types and a number of those parts on the light Mikado will be found exactly duplicated on the heavy Mikado type.

The boilers are of the conical wagon top type, with a diameter of 86 in. at the front course, increasing to a maximum diameter of 96 in. for the dome course. Comparing this boiler with that of the light Mikado type, it will be seen that the tube sheet is set back three inches farther from the center line of the cylinder saddle than in the lighter engine, and that the combustion chamber is 21 in. instead of 24 in. deep, the length of the tubes being 19 ft. in both cases. There are 247 $2\frac{1}{4}$ in. tubes, and forty-five $5\frac{1}{2}$ in. flues for the units of the type A superheaters with which the engine is equipped. The boiler is fitted with four three-inch Cole safety valves and the Chambers throttle.

The firebox is the same width as that of the light Mikado type, but an increase of 6 in. in length provides a great area of 70.8 sq. ft. as compared with 66.7 sq. ft. in the light Mikado boiler. The firebox is fitted with a Security brick arch, and the Shoemaker fire door. The locomotive is fired by a Standard stoker and is fitted with the Franklin grate shaker. The ashpan has two center hoppers, with swinging drop bottoms, both located forward of the trailer axle. The air opening below the mudring is about $5\frac{1}{2}$ in. wide.

A comparison of the boiler capacity with the cylinder demand on the basis of Cole's ratios shows a slightly better than 100 per cent boiler, both in heating surface and grate area.

The frame construction compares very closely with that of the light Mikado type locomotive. The main frames are of cast steel, 6 in. wide, and include single integral front rails. Over the pedestals the top rail has a depth of $6\frac{3}{4}$ in., while the lightest section between the pedestals is $5\frac{3}{4}$ in. in

depth, these being one-eighth inch thicker than similar sections of the light Mikado frames. Over the binders the lower rails are $4\frac{5}{8}$ in. deep, and have a minimum section $4\frac{1}{8}$ in. deep. Under the cylinders the frames are of slab section 6 in. wide by $10\frac{1}{4}$ in. deep. At the front ends where the front deck casting is attached the section is reduced to a depth of 10 in. by $3\frac{1}{2}$ in. in thickness. The wheel spacing of both types is identical, as is also the distance between the center of the cylinder saddle and the first pair of drivers and that between the center lines of the rear drivers and the trailing truck axle. The trailer frames are separate steel castings, each of which is attached to one of the main frames with fourteen $1\frac{1}{4}$ -in. bolts, the joint being the same as that employed on the light Mikado type locomotives. At the rear end the trailer frames are bolted to the rear deck casting.

The frame bracing of the two types is practically identical. It consists of vertical crossties bolted to the front legs of the forward driving wheel pedestals and to the rear pedestals of the second and third pairs of drivers; and deck braces applied to the top rails between the first and second and the third and fourth pairs of drivers. The forward vertical brace includes a diagonal extension which is bolted to the lower frame rails just back of the cylinders, and in which is also included the radius bar pivot for the front engine truck and the driver brake fulcrum. Cast steel driving boxes of straightforward design, fitted with grease cellars, are used throughout. With the exception of those for the main axle, the boxes and axles are all interchangeable with those used on the light Mikado type locomotive, the journals being 10 in. in diameter by 13 in. in length. The main journals are 12 in. in diameter by 13 in. in length, or one inch larger in diameter than those of the lighter locomotive. The driving wheels are fitted with brass hub liners.

With the exception of the springs, which are heavier for the heavy Mikado type, the Economy constant resistant engine trucks are interchangeable on the two types. The heavy Mikado type is fitted with Cole-Scoville trailer trucks.

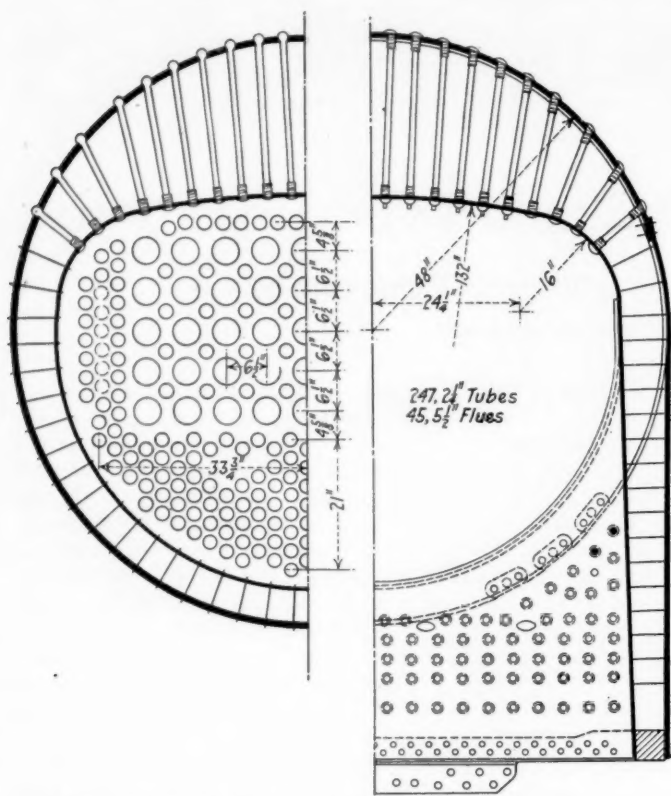
Gun iron bushings are fitted in the cylinders and valve chambers and the packing rings are of the same material. The steel pistons are of single plate sections to which are bolted gun iron wearing shoes. The details of the valve motion follow very closely those of the light Mikado type, the same piston valve and link being used in both cases. The valve chamber heads are also interchangeable. With the exception of the slight difference in the clearance for the front end of the main rod and crosshead pin the crosshead body is identical on both types. The wearing shoes, which are of Hunt-Spiller gun iron, differ in dimensions on the locomotives, but are of the same general style. The valve

*For a description of the United States Railroad Administration standard light Mikado type locomotive see the *Railway Age* for July 19, 1918, page 131.

gear is of the Walschaert type and is fitted with the Lewis power reverse gear. Paxton-Mitchell packing is used for the piston rods and valve stems.

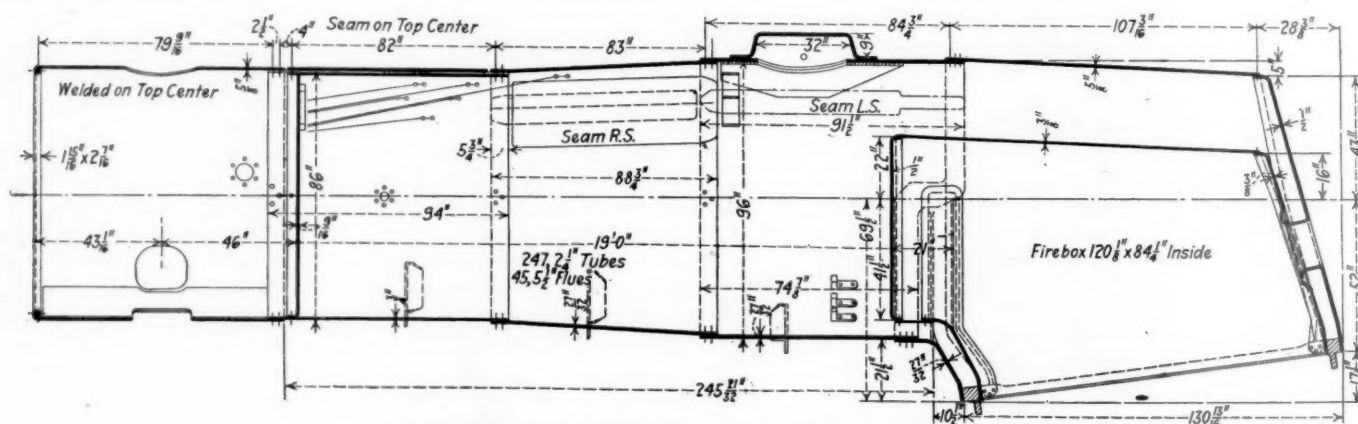
The standard 10,000-gal. tender which is used with the heavy Mikado type is identical with that in use with the light Mikados, and will also be used on several other of the standard types. The design of this tender was briefly out-

tender. The following are the principal data and dimensions of these locomotives:



Sections Through the Combustion Chamber and Firebox

lined in the description of the light Mikado type locomotive. It is carried on four-wheel trucks with 6-in. by 11-in. journals, and among the specialties with which these trucks are



The Boiler for the Heavy Mikado Type Locomotive

fitted it may be of interest to note that the brakebeams are carried on the Creco three-point support and that Woods side bearings are used.

The specialties with which these locomotives are fitted include Everlasting blowoff valves, Ashcroft gages, the Detroit six-feed lubricator, Hancock No. 11 non-lifting injectors, Barco flexible connections between the engine and tender, the Barco blower fitting, Sargent quick-acting blower valves, and the Radial buffer and Unit safety bar between the engine and

General Data	
Gage.....	4 ft. 8 1/2 in.
Service.....	Freight
Fuel.....	Bit. coal
Tractive effort.....	60,000 lb.
Weight in working order.....	320,000 lb.
Weight on drivers.....	239,000 lb.
Weight on leading truck.....	24,000 lb.
Weight on trailing truck.....	57,000 lb.
Weight of engine and tender in working order.....	492,000 lb.
Wheel base, driving.....	16 ft. 9 in.
Wheel base, total.....	36 ft. 1 in.
Wheel base, engine and tender.....	71 ft. 9 1/2 in.

Ratios	
Weight on drivers ÷ tractive effort.....	4.0
Total weight ÷ tractive effort.....	5.3
Tractive effort × diam. drivers ÷ equivalent heating surface*.....	653.2
Equivalent heating surface* ÷ grate area.....	81.7
Firebox heating surface ÷ equivalent heating surface,* per cent.....	3.5
Weight on drivers ÷ equivalent heating surface*.....	41.3
Total weight ÷ equivalent heating surface*.....	55.3
Volume both cylinders.....	21.2 cu. ft.
Equivalent heating surface* ÷ vol. cylinders.....	272.9
Grate area ÷ vol. cylinders.....	3.3

Cylinders	
Kind.....	Simple
Diameter and stroke.....	27 in. by 32 in.

Valves	
Kind.....	Piston
Diameter.....	14 in.
Greatest travel.....	.7 in.
Outside lap.....	1 1/2 in.
Inside clearance.....	.0 in.
Lead in full gear.....	3/16 in.

Wheels	
Driving, diameter over tires.....	63 in.
Driving journals, main, diameter and length.....	12 in. by 13 in.
Driving journals, others, diameter and length.....	10 in. by 13 in.
Engine truck wheels, diameter.....	33 in.
Engine truck, journals.....	6 1/2 in. by 12 in.
Trailing truck wheels, diameter.....	43 in.
Trailing truck, journals.....	9 in. by 14 ft.

Boiler	
Style.....	Con. wagon top
Working pressure.....	190 lb. per sq. in.
Outside diameter of first ring.....	.86 in.
Firebox, length and width.....	120 1/2 in. by 84 1/2 in.
Firebox plates, thickness.....	Sides, back and crown, 3/8 in.; tube, 1/2 in.
Firebox, water space.....	Sides and back, 5 in.; front, 6 in.
Tubes, number and outside diameter.....	247—2 1/4 in.
Flues, number and outside diameter.....	45—5 1/2 in.
Tubes and flues, length.....	19 ft.
Heating surface, tubes and flues.....	3,978 sq. ft.
Heating surface, firebox, including arch tubes.....	319 sq. ft.
Heating surface, total.....	4,297 sq. ft.
Superheater heating surface.....	.993 sq. ft.
Equivalent heating surface*.....	5,787 sq. ft.
Grate area.....	70.8 sq. ft.

Tender	
Tank.....	Water bottom
Frame.....	Cast steel
Weight.....	172,000

Wheels, diameter.....	33 in.
Journals, diameter and length.....	6 in. by 11 in.
Water capacity.....	10,000 gal.
Coal capacity.....	16 tons

*Equivalent heating surface = total evaporative heating surface + 1.5 times the superheating surface.

TYPHOID ON THE MURMAN RAILWAY.—Sixty per cent of the railwaymen on the Murman Railway are ill with typhoid fever and scurvy owing to lack of foodstuffs.—*Railway Gazette, London.*

I. C. C. Report on Valuation of Texas Midland

Renders Decision on Carrier's Objections to Tentative Finding—Will Report a Final Figure Later

THE INTERSTATE COMMERCE COMMISSION issued its report on the valuation of the Texas Midland late last week. This is the first property of a carrier on which the Commission itself has reported, and it contains decisions on a number of disputed points which will establish precedents for later valuations. Probably the most important finding of the Commission is the statement that, "While it may be questioned whether or not the act requires the finding of a single sum as the value of the property, we are of the opinion that it authorizes the finding of such value for purposes under the act to regulate commerce, and it is our purpose ultimately to make such findings as to each property. Tentative valuations in which a single sum as the value of the property is not stated will in due course be supplemented by such finding and a final valuation, including a single sum as to the valuation of the property will be duly issued. Under the circumstances of the instant case full justice will be done if the findings made as to underlying facts stand, with leave to the carrier and other parties to apply to be heard upon the undetermined question as to what sum shall be stated. Otherwise we shall state our conclusion in due course and complete the final valuation of the carrier."

The Commission found the original cost to date of the property to be \$2,892,360.94; the cost of reproduction new \$3,461,356 and the cost of reproduction less depreciation \$2,597,442. The latter two values are shown in greater detail in the table immediately following:

WHOLLY OWNED AND USED FOR THE PURPOSES OF A COMMON CARRIER				
Acct.	Classes	Cost of reproduction of road and equipment		
		New	Less depreciation	
I. ROAD				
1	Engineering	\$58,773	\$58,773	
3	Grading	411,886	411,491	
6	Bridges, trestles and culverts.....	387,792	289,461	
8	Ties	281,112	140,557	
9	Rails	525,134	434,205	
10	Other track material.....	103,295	65,944	
11	Ballast	227,255	181,804	
12	Track laying and surfacing.....	239,631	173,413	
13	Right-of-way fences.....	48,443	33,911	
15	Crossings and signs.....	29,565	23,217	
16	Station and office buildings.....	109,319	79,965	
17	Roadway buildings	27,004	17,491	
18	Water stations	30,428	22,267	
19	Fuel stations	7,675	5,383	
20	Shops and engine houses.....	68,155	51,447	
26	Telegraph and telephone lines.....	8,715	5,863	
27	Signals and interlockers.....	9,834	7,619	
29	Power-plant buildings	6,474	5,308	
32	Power-distribution systems	1,867	1,253	
35	Miscellaneous structures	84	29	
37	Roadway machines	2,306	1,404	
38	Roadway small tools.....	2,295	1,263	
43	Other expenditures—road	5,528	4,091	
44	Shop machinery	57,333	41,430	
45	Power-plant machinery	21,009	15,134	
Total, 1 and 3 to 45, inclusive.....		2,670,912	2,072,723	
II. EQUIPMENT				
51	Steam locomotives	187,928	107,643	
53	Freight-train cars	190,432	120,423	
54	Passenger-train cars	73,455	39,236	
55	Motor equipment of cars.....	57,020	53,769	
57	Work equipment	73,236	41,869	
Total, 51 to 57, inclusive.....		582,071	362,940	
III. GENERAL EXPENDITURES				
71	Organization expenses.....	40,064	31,091	
72	General officers and clerks.....			
73	Law			
74	Stationery and printing.....			
75	Taxes	144,280	110,635	
76	Interest during construction.....			
Total, 71 to 76, inclusive.....		184,344	141,726	
Grand total, 1, and 3 to 76, inclusive....		3,437,327	2,577,389	

Texas Midland share (1/4) of 0.212 miles owned jointly with H. & T. C.....	1,091	849
Texas Midland share (1/4) of 0.182 miles owned jointly with T. & N. O.....	1,395	983
Texas Midland share (1/4) of 0.496 miles owned jointly with M. K. & T. and St. L. S. W.....	1,822	1,272
Texas Midland share (1/4) of 0.091 miles owned jointly with St. L. S. W.....	19,721	16,949
	3,461,356	2,597,442

Commissioner Aitchison, who was counsel for the National Association of Railway Utilities Commissioners in the hearings of these cases, did not participate in its disposition.

A large part of the report is devoted to the discussion of the protests of the carrier and others to the tentative valuation which was served on the road on October 21, 1916. Hearings on the protest were held on Washington and at other points in 1917. An abstract of the decision of the Commission on the various points raised is given below.

Original Cost to Date

In the tentative valuation it was stated that the "original cost of road could not be found." Figures purporting to show original cost of equipment and land were, however, reported. The corporate and financial history of the carrier, together with a statement of its gross and net earnings from the time it began operations to valuation date, has also been incorporated. From the tentative valuation it is possible to ascertain the amount of money which has been expended in the property as accurately as the records of the carrier permit. Since the service of the tentative valuation certain other sources of information have been made available to us and made of record, which now permit a statement to be made of at least the maximum original cost.

In the instant case we are able to give a figure which clearly represents, within reasonably close limits of accuracy, the maximum amount of money which this carrier, its predecessor, or any other person or persons, invested in the property, as representing the maximum original cost to date thereof, \$2,892,360.94.

Cost of Reproduction New

In complying with the requirement of the act that "the Commission shall ascertain and report in detail * * * the cost of reproduction new" of each piece of property owned or used by a common carrier for common-carrier purposes, we have proceeded upon the theory that the property under valuation is nonexistent. In the tentative valuation in this case we find that the cost of reproduction new of road and equipment, exclusive of lands, is \$3,382,004, arrived at in the following manner: The engineer making the estimate assumed that the road was not in existence. All other conditions in the territory through which the road runs were taken as they existed on valuation date. The engineer then prepared what he conceived to be the most practicable and economical program for the construction of the road. The items which make up the physical property were then inventoried and cost prices fairly representative of conditions on valuation date were applied. To the figures thus obtained was added the estimated cost of placing the items in position as of valuation date, including certain overhead charges. The result thus arrived at is the cost of reproduction new.

So far as we know, this basis for reporting cost of reproduction new has been universally used ever since the valuation of public utilities has been attempted. Cost of reproduction new, as applied to the items embraced in the engineer-

ing report, must be assumed to mean exactly what the words themselves imply, namely, that a railroad actually being operated is conceived of as nonexistent and then theoretically brought into existence by a succession of steps well known to competent engineers.

Topographical Conditions

The bureau, in its estimates of reproduction cost, has in this respect disregarded conditions existing at the time of construction and has considered the right of way of the carrier in connection with the land which adjoins it on valuation date. For example, if tillage land is on either side of the right of way, the right of way is treated as similarly devoid of trees and brush; if a forest adjoins the right of way it is assumed that the right of way is a part of the forest with a corresponding growth thereon. We approve this method as involving the minimum of conjecture.

As previously stated, we interpret the term "cost of reproduction new" literally, i.e., the cost of reproducing under present conditions the existing property of the carrier without computing depreciation. The amount of clearing and grubbing which was necessary in the original construction is reported in "original cost to date" when it can be obtained. There can be no doubt that the building of the railroad has added to the value of adjoining land. We are required to find the present value of lands in a carrier's right of way; and such present value is measured by the value of adjoining lands. It would therefore be improper to allow for clearing and grubbing originally done in addition to the benefit derived by the carrier from the increase in the value of adjoining lands.

Industrial Tracks

In the course of the development of the transportation systems as they exist in the United States today thousands of so-called industrial tracks have been constructed. These tracks have generally been constructed in accordance with contracts between the industry and the carrier, and the considerations of the contracts have varied greatly. In most instances the industry pays a portion of the entire expense of constructing the track, including the cost of the land and materials used.

We have defined an industrial track in Valuation Order No. 12 as a "track which the carrier has not an unrestricted right to use in serving the general public, but which it has obligated itself to use instead exclusively, or preferentially, in serving a particular industry or certain industries." In cost of reproduction new the inventory of the carrier includes such portions of an industry track as it would have a right to remove if it should discontinue the service, except that we always include in the carrier's inventory the estimated cost of reproducing any item of property in the industrial track which was in fact paid for by the carrier in original construction. In determining the portions of the track which the carrier would have a right to remove in case of reproduction if the service were discontinued, we assume that reproduction would take place under a contract identical with that covering original construction. Where the carrier has procured the right of way and constructed the track at its own expense, both are inventoried to it. If the industry constructed the track at its expense and owns it, nothing is allowed to the carrier in cost of reproduction new. Where the carrier and the industry have both contributed, which is the usual case, the carrier is credited with an amount covering the estimated cost of reproducing that which it did produce. If the industry has paid for the items of property making up the track, but has given the carrier the right by contract to remove the track, etc., credit is given to the carrier for the reproduction cost of such property. In the case of land nothing is allowed the carrier if the land is

owned by the industry. When, however, the carrier does not own the land, grading and other permanent structures are inventoried as above described. In other words, the carrier is limited to its interest in the industrial track.

That the policy pursued by us regarding industrial tracks is entirely fair to the carrier can not be questioned. The carrier is not only credited with the amount of money which it is estimated would be the cost of reproducing that which it did produce, but in addition thereto is considered the owner of materials going into the tracks, even though such materials were paid for by the industry, when the right of removal on discontinuance of the service can be shown.

Assessments for Public Improvements

In account No. 39 of the classification of investment in road and equipment, the carrier is required to report the cost of constructing public improvements, such as grading, sewerage, curbing, guttering, paving, sidewalks, etc. This account also includes the cost of improvements when made by the carrier's employees under government requirements. The principle announced concerning the treatment of "topographical conditions" in cost of reproduction new applies with equal force to this item; and, since the property of the carrier is presumed to be reproduced under present topographical and other present conditions, it will be seen that no assessments for public improvements would be incurred, and this item would therefore be improper. As assessments for public improvements can only be levied in proportion to benefits received by the lands assessed, the present value of lands adjacent, taken as the basis for the ascertainment of the value of railroad lands, reflects the public improvement assessments in question. It should be stated, however, that if a public improvement for which an assessment against a carrier has been made in the past is located on the right of way of the carrier, or so closely connected therewith that it would be wiped out if the railroad were removed, the estimated cost of reproducing such an improvement would be included in the valuation under the heading of cost of reproduction new.

Property Used but Not Owned

Where property is owned by a common carrier and is used by it jointly with another carrier or carriers for common-carrier purposes, the property is included in detail in the inventory of the owning carrier and reference is made to the use by the other carrier or carriers. The extent and terms of the use appear also in the inventory of the using carrier or carriers.

In the case under consideration the carrier uses jointly with the owner that portion of the St. Louis Southwestern Railway of Texas, commonly known as the Cotton Belt, between Commerce, Texas, and Greenville, Texas, 13.97 miles in length, as a part of its main line. This portion of the Cotton Belt forms the connecting link between two pieces of track owned exclusively by the Texas Midland. Without it the carrier would be unable to perform through transportation service between points located north and south, respectively, of this particular portion of the Cotton Belt. The 13.97 miles has been considered as a single valuation section. It has been inventoried and priced by itself. Cost of reproduction new and cost of reproduction less depreciation for it will be stated separately. This detailed information will appear in the inventory of the Cotton Belt when completed, with a statement that this section is used by the Texas Midland, together with a description of the terms of the use. In the tentative valuation under consideration it is stated "the tracks of the St. Louis Southwestern Railway Company of Texas between Greenville and Commerce, a distance of 14 miles, are used under a trackage arrangement to unite the two pieces of the Texas Midland * * *" so that if it becomes essential it will be possible at any time to

refer to the inventory of the Cotton Belt and ascertain the cost values for that particular piece of property.

Contingencies

In the estimate of cost of reproduction new we have not allowed any amount under the head of "Contingencies," and this omission is assigned as error by the carrier.

In our view the theoretical reproduction of a railroad, such as is assumed in valuation work, is materially different from the original construction and does not justify an allowance for contingencies as such. In theoretical reproduction the property to be constructed by the engineer is before his eyes. The topography of the country through which the right of way runs can be observed. He knows the natural difficulties which will have to be overcome. If rock is found, his estimate is based upon cutting through or removing that rock. The exact amount of materials above the roadbed is capable of ascertainment, and no addition should be made for materials omitted. However, with respect to certain materials the carrier is not limited to the amount necessary to duplicate what is actually in the property. This is illustrated by the item of spikes. It is recognized that in laying rail a certain percentage above the number of spikes required is purchased to take care of losses and imperfections, and an allowance to cover these possibilities is made. It is recognized, of course, that in compiling the inventory of the road-way there are certain quantities which are hidden and can not be observed.

In estimating hidden quantities the representatives of the Commission rely upon the statements of the carriers supplemented by such records as they may possess, tested by the observations of our engineers. These statements and records are accepted unless they appear to be erroneous on their face. Field notes of the Commission containing the estimate of the quantities to be allowed are furnished the carrier if desired, and if objected to the matter is thoroughly investigated. In the application of prices to the items embraced in the inventory, we endeavor to compensate for all expenses which will be met in connection with a particular item. The item of grading furnishes a good illustration. We ascertain the price per cubic yard which is proper to apply for grading, and its determination in this regard is guided by prices paid under contracts for work of this character. However, it is recognized that certain work is performed by the grading contractor which is not included in his contract price, such as erecting temporary bridges, constructing ditches off the right way, etc. To the price per cubic yard which is obtained in the manner indicated above is added an estimated amount to cover the additional expense. A similar addition is made in other cases when necessary.

The statement that no provision for contingencies has been made by us in this proceeding is therefore incorrect. The figure reported as cost of reproduction new is an estimate of the amount of money necessary to reproduce the identical property under valuation. The inventory is made with great care and the prices applied are arrived at after exhaustive study. Every necessary expense is taken into consideration.

Since reproduction new is at best an estimate, it is apparent that an estimate arrived at upon a basis as outlined above is as liable to be too high as too low and that therefore there is no warrant for the addition of a definite amount to cover contingencies, but that any allowance of that kind which ought to be made should be and is taken care of in connection with particular items of property.

Engineering

In the tentative valuation under consideration we allowed for engineering approximately 2.15 per cent of the amount shown as cost of reproduction new of the road accounts, exclusive of land and engineering itself. The carrier contends that this amount is not sufficient and that

between 4 and 5 per cent should be provided. It has also been contended by certain carriers that it is not correct to allot a gross sum for engineering, but that engineering should be assigned to particular pieces of property.

In order to ascertain the proper percentage to apply the bureau made a study of the accounts of different construction projects. This study embraced 121 projects in different sections of the country ranging from $2\frac{1}{2}$ miles to 900 miles in length. The total number of miles of construction was 9,617, the cost of which was \$302,000,000. The amount found charged to engineering varied from 0.837 per cent to 9.732 per cent of the total amount shown as investment in road excluding land. In 6 instances the percentage for engineering exceeded 6 per cent; in 10 instances it was between 5 and 6 per cent; in 4 instances it was below 1 per cent, and in 16 instances between 1 and 2 per cent. In the balance of instances, 85, it ranged from 2 to 5 per cent. The weighted average showed approximately 3.6 per cent.

In view of this study our engineers were instructed to include for engineering an amount which should not be less than 2 per cent nor more than 5 per cent of the investment in road, exclusive of engineering and land. Should a member of the engineering board believe that there are peculiar circumstances which justify the application of a lower or a higher percentage, he is instructed to bring the case to the attention of the bureau.

In the instant case the estimate was first made by the synthetical method and the figure which was used was reached. When the instructions referred to above were issued it was concluded that this figure represented a sufficient amount, and it was allowed to stand.

General Expenditures

Items 71 to 77 of the classification of investment in road and equipment of steam roads are termed "general expenditures." 71. Organization expenses. 72. General officers and clerks. 73. Law. 74. Stationery and printing. 75. Taxes. 77. Other expenditures—general. Our accountants made a study similar to that undertaken in connection with engineering and covering the same list of carriers. The percentage of general expenditures other than interest to all road accounts, excluding land for the different valuation districts, was as follows:

	Per cent.
Eastern	1.766
Southern	2.251
Central	1.362
Western .....	.838
Pacific	4.086
Average	1.930

After careful deliberation, the bureau concluded that $1\frac{1}{2}$ per cent of the amount of all road accounts, exclusive of land, would be a fair estimate for general expenditures in the case of all roads. Where, however, more than a nominal charter fee has been required, the engineers have been instructed to ascertain the amount of such fee and add it to the $1\frac{1}{2}$ per cent.

Cost of Obtaining Money

The bureau assumed that the reconstruction would be done by a company the credit of which was good and which could purchase supplies at advantageous prices. This policy having been adopted, it was necessary to determine the rate of interest. Since a railroad with good credit has no difficulty during normal times in borrowing money at $4\frac{1}{2}$ per cent, it was felt that the rate of 6 per cent would be ample to cover all incidental items of expense in connection therewith.

Construction Period

The time allowed for the construction period in cost of reproduction new is important in its relation to the amount to be allowed for interest during construction. From our

examination of the records of construction in the past, it is fair to state that, so far as the expenditure of money is concerned, the construction of a railroad is properly divided into two parts—the preliminary period before the construction begins, and the period of construction itself.

In view of the difficulty of estimating the preliminary period and of the further fact that expenditures are small during this time it was decided to state the period required for construction only.

The construction period, as determined by our engineers, does not represent the shortest period in which the railroad could be constructed, but rather that period within which the work might be economically done. The usual delays which occur in normal times, due to labor and market conditions, are assumed to exist, but unusual delays, due to financial troubles and other causes peculiar to individual properties, are eliminated.

All existing means of transportation, aside from the property itself which is under reproduction, are assumed to exist. The carrier in this proceeding is crossed by several different roads and these roads are used theoretically to bring in men and materials to junction points. This enables the engineer to proceed with the hypothetical reproduction at several different places at the same time. This assumption often reduces the period allowed for reproduction materially below that which was required for the building of the property, but since the circumstances and conditions surrounding reproduction are entirely different from original construction, this method is believed to be fair.

Interest During Construction

The rate of 6 per cent interest having been approved, it remains to consider the length of time for which this rate should be applied. If the assumption that the money required for each six months is on hand at the beginning of that six months is reasonable, and we find that it is, the time for which interest should be allowed is one-half the construction period plus three months, which will be ample to cover the relatively small amount of money which is expended prior to construction. This is the method which has been adopted by the bureau, and interest is computed upon the total amount of the road and general expenditures accounts with the exception of land and interest during construction.

Materials and Supplies and Other Working Capital

In the accounting report which accompanied the tentative valuation and made a part thereof is an inventory of the materials and supplies on hand as of June 30, 1914. The records of the carrier show an investment of \$82,943.24 in materials and supplies, while the inventory prepared by the bureau, at prices obtained from invoices rendered the carrier, shows a value of \$96,857.19. The carrier contends that we have erred in not including materials and supplies in the three cost values. The suggestion is made that cash items should also be included and taken at par. In cost of reproduction new, however, the property to be theoretically reproduced is the railroad itself. It does not contemplate the inclusion of materials and supplies and cash on hand, which are so-called liquid assets, and change from day to day. The accounting report, which is a part of the tentative valuation, contains full information with respect to these items as of the valuation date. The method pursued is a compliance with the act.

Second-hand Materials

Where second-hand materials were installed and still exist, the bureau has interpreted cost of reproduction new to mean the cost of reproducing the materials in the same condition in which they were installed. The carrier alleges that this interpretation of the word "new" is incorrect, and that market prices on valuation date for new materials of the

same kind should be applied to such units. A strict interpretation of the word "new" in estimating the cost of reproduction new of a property of that kind would require the substitution of new materials for materials which are known to have been second-hand when the road was "new" or first built. We do not think that the act requires or contemplates this. The property to be reproduced is the existing property as it was when it was put into its present service. When the records of the carrier clearly show that second-hand materials were used the cost of reproduction new will be estimated for the same kind of materials in the same condition as when installed.

Quantities and Unit Prices

The commission gave careful consideration to the protests of the carriers relative to unit prices. In many instances the figures of the Division of Valuation were supported, but in other important instances they were raised in view of the evidence submitted by the carriers. The price of 56 cents for burnettized pine ties was increased to 69 cents; the price allowed for burnt clay ballast was increased from 80 cents to \$1 per yard, and the amount included for track laying and surfacing was increased from \$780 to \$900 per mile of road. No allowance was made in the tentative valuation for telegraph lines. The commission states that "a telegraph line is necessary in the conduct of the business of the carriers and for the purpose of estimating the cost of reproduction new of this property it is assumed that it would equip itself with this facility in the same manner that it did originally." It, therefore, allowed \$8,715 for this account. In view of the increase in the estimates for cost of reproduction new the amount allowed for engineering in the tentative report represented less than two per cent. The commission increased this to $2\frac{1}{4}$ per cent on the revised estimate.

Depreciation

The act requires us to report in detail as to each piece of property "the cost of reproduction less depreciation." In complying with this requirement the bureau has treated depreciation as the exhaustion of capacity for service. It has inquired how much of such capacity existed when new, what part has been used up, and what part still remains. It states the remaining capacity as a fraction of which the total is the denominator and the part remaining the numerator. Taking cost of reproduction new the depreciation which has already accrued is subtracted, due consideration being given to salvage or scrap when this exists, and the remainder is given as cost of reproduction less depreciation.

The carrier insists that this conception of depreciation is wrong, that the inquiry should be whether the property is in 100 per cent efficiency. So long as it is maintained at 100 per cent efficiency, or what comes to the same thing, so long as there is no deferred maintenance, there can be no depreciation.

After quoting a number of decisions of the courts, the commission states that it is clear, therefore, that when the act was passed, the word "depreciation" as used in the phrase "cost of reproduction less depreciation" had acquired a definite meaning. It must be assumed that Congress used the word in that sense. Nor is there today any other recognized meaning. We approve and adopt the definition of depreciation which the bureau has applied in this case.

Lands

The protest raises two questions, which in fact are one: (1) Shall the Commission ascertain and report the reproduction cost of carrier lands, and (2) shall the Commission ascertain and report the present cost of condemnation and damages or of purchase of the carrier's lands? Together these questions present the issue as to the duty of the Commission to report the reproduction cost of lands.

What is meant by present value, as the term is used in the tentative valuation, is thus defined by the director of valuation:

"Present value * * * is arrived at by ascertaining the number of acres of land owned or used by the carrier for its purposes as a common carrier and multiplying this acreage by a market value determined from the present market value of similar adjacent and adjoining lands. Due allowance is made for any peculiar value which may attach by reason of the peculiar adaptability of the land to railroad use.

"Nothing is included for the expense of acquisition, nor for severance damages, nor for interest during construction."

It seems elementary that the cost of reproduction can be estimated only by assuming that the thing in question is to be produced again, and that if it is to be produced again, it is to be taken as not existent. It seems sophistry to contend that lands of the railroad can be produced again at a cost to the railroad without first making the assumption that they are no longer lands of the railroad; and this necessary assumption carries with it the mental obliteration of the railroad itself.

Considerable testimony was produced to the effect that in the acquisition of a railroad right of way it is necessary for the carrier to pay sums in excess of the value of the land if measured by the present or market value of similar contiguous lands because of elements, such as cost of acquisition, damages to the severed property, cost of buildings and other improvements, accrued taxes and various incidental rights. That there is a marked difference between assuming in advance the total cost of acquisition, whether as the result of condemnation and damages paid or of purchase, in excess of the present value of similar lands in the vicinity, when no railroad has been constructed or is in operation, and the attempt to ascertain and state the cost of reproducing or reacquiring, at the present time, lands which actually have been severed from the adjacent property, have been converted into a railroad, and are being occupied by an operating rail carrier, seems clear.

Because of the impossibility of making the self-contradictory assumptions which the theory requires when applied to the carrier's lands, we are unable to report the reproduction cost of such lands or its equivalent, the present cost of acquisition and damages, or of purchase in excess of present value.

Streets and Highways

Where a street or an alley in a municipality has been vacated, that is, where the use of land as a street or an alley has been discontinued, and the carrier is using the land exclusively for common-carrier purposes, the original cost of the land to the carrier, if it can be ascertained, and its present value, measured by the market value of similar land in the vicinity, will be included in the inventory as land owned by the carrier, unless it affirmatively appears that the carrier does not own it.

Where a street or an alley in a municipality is used as such by the public, and is also used by the carrier for its common-carrier purposes, either along or across the same, no part of the land so jointly used will be included in the inventory as land owned by the carrier, unless it affirmatively appears that the carrier owns it.

Where a highway outside of a municipality is used as such by the public, and is also used by the carrier for its common-carrier purposes, either along or across the same, the land so jointly used, together with its original cost to the carrier, if that can be ascertained, and its present value, measured by the market value of similar land in the vicinity, will be included in the inventory as land owned by the carrier, unless it affirmatively appears that the carrier does not own it.

Appreciation

Carriers have introduced considerable testimony to show that an old roadbed is of more value than a new one and have urged that this value should be stated in some form in the report of the commission. As to the fact, no serious question can be made. While most items of property entering into the construction of a railroad depreciate from the first, the cut and embankment appreciate. It is apparent that it was the intent of Congress to require a statement of all those costs, values and other circumstances which might bear upon the value of the property, for rate-making purposes at least, and possibly for other purposes. Appreciation is a fact which may affect the final value of the property. Without attempting to indicate what its influence should be, or whether it should have any influence, it should if possible be dealt with in our report.

The attempt to measure the value of appreciation by its cost is not consonant with our prescribed rules of accounting, under which the expenses of operation are chargeable to operation. There is no part of this expense which the carrier has carried or could properly carry into its investment account. If the public has once paid for this added expense, which is inherent in the early years of operation, should it be constantly taxed on account of these same expenses in the way of added rates?

Our conclusion upon the whole subject, therefore, is that no separate value can be placed upon appreciation. When it definitely appears that it exists it must be taken into account in determining the value of the property. The influence which appreciation should have upon value may depend upon the previous history of the property. All this depends upon the purpose for which the value is being stated and the manner in which that value is to be determined.

Other Values and Elements of Value

The act requires that "the commission shall in like manner ascertain and report separately other values, and elements of value, if any, of the property of such carrier, * * *

In the tentative valuation under consideration we have stated that "no other values or elements of value were found to exist." The carrier asserts that since no figure has been reported under this heading, the act has not been complied with.

Before the tentative valuation was served, the carrier was requested to file a statement of the items, if any, upon which an allowance under this heading was claimed. In response thereto claim was made on account of (1) going-concern value; (2) connection with other lines; (3) good station facilities; and (4) gradients.

At the hearing counsel for the carrier stated that he did not understand that the carrier would be expected to put in testimony with respect to its claim under this heading. The director of the bureau stated at that time that the commission would be glad to listen to any testimony the carrier might care to offer. Notwithstanding this invitation, no testimony has been offered in this case with respect to the items under consideration.

We have diligently searched for and inventoried the property of the carrier and have reported everything we have found in the tentative valuation already served. The carrier has asserted that there are other values and elements of value in connection with its property, but although repeatedly asked to do so, has failed to name a figure which it believes should be found by us.

In this connection it should be stated that in the instant case going-concern value has been given consideration in the cost of reproduction new and cost of reproduction less depreciation figures. In the cost of reproduction new and cost of reproduction less depreciation figures the values assigned to the property are not those of a dead plant but of a going concern, and to the extent indicated in the Des

Moines Gas Case, this element has been covered in the figures. Going-concern value has been described as the value of an assembled and established plant doing business over one not thus advanced. In making up the inventory we apply prices to the different parts of the property in the light of the fact that it is a railroad and doing business; otherwise the prices which would be applied would be scrap prices.

The owners of the Texas Midland have not received a fair return on their investment in this property. The operation of the road has resulted in frequent deficits. These deficits are not elements of value, but they are pertinent facts to be given consideration in a proper proceeding.

The requirements of the act in this regard have been fully complied with.

What the Railroad Administration Has Accomplished

A Statement by Theodore H. Price, Actuary to Director General
McAdoo, in Reply to a Newspaper Criticism

MY ATTENTION HAS BEEN CALLED to an editorial in a prominent daily newspaper published August 10 headed "Government Railroads," as well as to an article headed "After 7 Months—The Effects of Railroad Unification," published on August 5, in the same paper.

Both these articles criticise government administration of the railroads with an affectation of patriotic tolerance which seems to assume that it is an evil that must be endured during the war despite its alleged inefficiency.

Briefly, the grievances complained of are:

1. The advance in freight and passenger rates.
2. The abolition of the through bill of lading for export freight and the cancellation of export and import rates.
3. The dismissal of solicitors who "took an interest in the handling of the traffic" and the consolidation of freight and ticket offices.
4. The withdrawal of the credit previously allowed in the matter of freight charges which must now be paid before or upon the delivery of the goods unless the consignee gives a bond that will protect the government.
5. The difficulty of getting information regarding tariffs and rates.
6. The discontinuance of the package car service between important jobbing and consuming sections.
7. The withdrawal of the shippers' right to route their freight as they choose.

In support of the claim that these changes have inconvenienced the public without increasing the efficiency or carrying capacity of the railroads, the editor of the paper referred to comments as follows upon the recently published statistical statement of railway operating details and results for the first five months of government operation which ended May 31, 1918:

GOVERNMENT RAILROADS

We have now some details as to the first five months of government operation of the railways; and while it is far too soon to pass any judgment, two facts stand out very strongly and are worthy of note.

The first is that in these five months, on the face of the figures, the roads carried slightly less ton-mileage than in 1917. This, in spite of the tremendous pressures of war and of the known increase in many lines of production, is certainly very significant. Extra traffic has been carried in other ways, largely, as we know, by motor trucks.

The second fact is that the number of available locomotives and cars remained practically the same as in the first part of 1917. There was no increase. The roads were taken over for their supposed inefficiency. But the government, with all its money and power, has found it easier to acquire experience than to increase the efficiency of the railroad machine.

After five months of unlimited credit and power there is no increase in cars or locomotives, or rail movement, or tonnage hauled. To move their increased traffic the industries of the country have had to resort to the highly expensive carriage by motor trucks over country roads. This may have been unavoidable, and the Railway Administration, like the fuel bureau, may have done everything possible. It may prove its wonderful efficiency and high superiority in time. We merely point out there is no evidence yet that the government is performing no miracles that might not have been expected of the roads themselves, if they had simply had enough money to go ahead in their ordinary way.

This is a fairly complete summary of the attempted arraignment of governmental administration of the railroads.

(Here follow the figures for freight train operation from January to May, which were reproduced in the *Railway Age* of August 9, page 258.—Editor.)

It will be noticed that these figures show that the number of tons of freight carried one mile during the first five months of this year was 0.6 per cent less than during the same month last year. But they also indicate that the loaded freight car mileage traveled in the carriage of this freight was 552,868,-

512 miles, or 8.6 per cent less than the distance traveled under private management in the carriage of nearly the same ton mileage of revenue freight during the same period in 1917.

A reduction in the average daily mileage of locomotives and freight cars will also be noticed. This is likewise due to the heavier train load and car load. It is not economically practicable to haul heavy trains as fast as light ones and the Railroad Administration has adopted the policy of loading trains to capacity and moving them on schedules that are not too fast to be maintained.

The showing indicates—not inefficiency—but a striking increase in the efficiency with which the railroads are being operated. It is directly due to the heavier loading of the freight cars and the greater train load now pulled by each engine. The average carload has been increased from 26.2 to 28.5 tons, or 8.8 per cent. If this ratio is maintained, it will be the equivalent of an addition of 8.8 per cent, or 211,200 freight cars to the present equipment of about 2,400,000 cars, and if the ratio of increase in the train load, equal to 2.7 per cent, is maintained, it will be the equivalent of adding about 1,750 to the present equipment of some 65,000 locomotives of all sorts. Surely this is better than buying new cars and locomotives at a time when they can only be had at extravagant prices and the manufacturing energies of the country are overtaxed to provide the things required for the winning of the war.

Instead of proving the inefficiency of government management, the newspaper referred to seems to have adduced the strongest possible proof of its efficiency and wisdom in demonstrating that the old cars and engines are being made to do more work than they performed under private management. The same progress toward the intensive use of the present equipment is to be found in the report of loaded cars arriving at Philadelphia and Pittsburgh during the first four weeks of July. This report is as follows:

Comparative statement loaded cars and tonnage contents arriving at Philadelphia and Pittsburgh four weeks ending July 27, 1918, and corresponding four weeks previous year

CARS		TONNAGE	
1918	100,228	1918	3,023,207
1917	107,158	1917	2,752,765

These figures show an increase of 9 per cent in the tonnage and a decrease of 7 per cent in the cars used. The number of tons per car in July, this year, is 30.2 as against 25.7 tons in the same period last year. The increase of 18 per cent, if it were general throughout the country, would be the equivalent of an addition of about 432,000 cars to the freight car equipment of the railroads.

Although the government has recently ordered 100,000 new freight cars and about 4,000 engines have been under order for a long time, to provide for the expected increase in the traffic, they cannot be turned out in a day and while waiting for them the present capacity of motive power and rolling stock is being scientifically increased, not only by in-

creasing the car load and train load, but by sending the traffic over the shortest and least resistant routes without regard to the caprice of the shipper. Moreover, priority has been given to orders for the large number of locomotives required by General Pershing for military operations in France and the locomotive works have been thereby prevented from delivering promptly the engines ordered for the railroads.

In several cases the distance that freight in transit between two important cities formerly traveled has been shortened by from 200 to 500 miles and in one instance recently some 8,999 cars carrying freight between two western cities were within a period of sixty days re-routed so as to effect a saving of 195 miles in the mileage traveled by each car. This was the equivalent of 1,754,644 car miles, which at six cents a car mile means a saving of \$105,278.

As to the alleged movement of freight by motor truck it can only be said that the government is moving regular freight and passenger trains promptly, notwithstanding the extra tax imposed on its facilities by a troop movement now averaging 1,100,000 men per month, that there is no freight congestion or delay, that the cars supplied to the coal mines are now in excess of the daily loadings and that if shippers are sending their goods in unusual quantities by motor truck which is not provable and is doubtful, their action is not the result of a lack of railway transportation.

In fact, the Railroad Administration has of late been urging merchants to take advantage of the present carrying ability of the railways to stock up against their winter's needs when weather conditions make train operation more difficult.

Of the other items in the indictment of government operation of the railways referred to it may be remarked:

1. That the advance in the cost of transportation is less

have involved a wasteful use of facilities that are needed for the winning of the war, and

7. That if shippers were allowed to select the routes by which their freight would be carried, the efficiency and economy that are shown to have been secured by re-routing could not have been obtained.

To this categorical refutation of the grievances alleged by complainants whose attitude reminds one of the couplet which runs

"The good old times—
All times are good when old,"

and suggests that they are to be classed with the chronic reactionaries and opponents of progress, I can only add that two months' close study of what has been and may be done under a unified management toward increasing the serviceable efficiency of the American railways convinces me that the wisdom of the President's action in taking over the transportation facilities of the country will be cumulatively demonstrated as the years roll by.

Rail Specifications Compared

IN VIEW OF THE PROSPECT of an order for rails by the Railroad Administration, the question arises as to what specifications will govern their manufacture, test and inspection. Specifications have been prepared by manufacturers, several associations and a number of individual railroads, and all are being used to a greater or less extent. In general these specifications are not far apart, but they all differ as to one or more details and up to the present there has been

		COMPARISON OF VARIOUS SPECIFICATIONS FOR COMMON WEIGHTS OF RAIL. OPEN HEARTH STEEL															No. of original test pieces				
		Chemical content in decimals of one per cent															To be drop tested	To be broken			
		Carbon					All sections					Height drop test (feet)									
Name	Date	70 lb.	75 lb.	80 lb.	85 lb.	90 lb.	100 lb.	101-120 lb.	130 lb.	Mn.	P	S	S ₁	70	75	80	85	90	100	101-120	130
Am. Ry. Engr. Assoc.....	3-17-15	53-66	53-66	53-66	62-75	62-75	62-75	...	...	60-90	04—	...	10+	16	16	17	17	17	18	...	...
Am. Ry. Assoc.....	11-17 and 30-15	53-66	53-66	53-66	62-75	62-75	62-75	...	...	60-90	04—	...	10+	16	16	17	17	17	18	...	...
Am. Soc. Test Mat.....	9-10-14	53-66	53-66	53-66	62-75	62-75	62-75	...	...	60-90	04—	...	20—	16	16	17	17	17	18	21	...
Manufacturers†	1914	53-66	53-66	53-66	59-72	59-72	59-72	62-75	...	60-90	04—	...	20—	16	16	16	17	17	18	...	...
Colo. Fuel & Iron Co.†	1-1917	53-63	55-65	55-65	58-68	58-68	60-70	...	...	60-90	06—	...	20—	16	16	16	17	17	18	...	...
Tenn. Coal, Iron & R. R. Co.	1914*	53-66	53-66	53-66	59-72	59-72	59-72	62-75	...	60-90	06—	...	20—	16	16	16	17	17	18	...	...
U. S. Steel Products Co.	9-1914	40-55	45-60	45-60	55-70	55-70	55-70	...	...	60-90	04—	...	20—	15	16	16	17	17	18	...	...
Harriman	9-7-16	...	55-68	...	...	63-76	63-76	...	...	70-100	04—	...	10-20	...	16	...	...	17	18	...	...
C. & N. W.	7-1-17	53-66	53-66	53-66	62-75	62-75	62-75	...	...	60-90	04—	...	10+	16	16	17	17	17	18	...	...
C. P. R.	1917	...	...	...	58-72	...	62-76	...	...	60-90	04—	055—	075-18	...	...	...	20	...	22	...	2 1 from ca. ing.
N. Y. C. & H. R. R.	9-25-15	...	...	55-68	...	60-73	62-75	...	...	70-100	04—	...	10-20	...	...	18	...	18	20	...	3 0
P. R. R.	5-20-15	...	...	...	...	...	60-75	...	...	60-90	04—	...	10-30	...	...	...	...	18	...	...	3 3
P. R. R.	4-19-16	...	...	...	...	...	...	...	68-87	80—	04—	...	05-20	...	...	...	...	...	18	...	3 3

*Exhibit A. †Also Exhibit "B" for Tennessee Coal, Iron & Railroad Company.

‡Increase carbon 0.01 per cent for each 0.003 per cent decrease in phosphorus to 0.03 per cent. §Carbon content and height of drop test for 105-lb. rail same as given for 100-lb. rail.

than the advance in wages and the price of almost every other commodity that society requires.

2. That through bills of lading for export cannot be issued because the government has preempted the ocean room and there is no assurance that the goods can be forwarded upon arrival at the seaboard.

3. That as competition between the railroads no longer exists there is no occasion for competitive solicitors and ticket offices and that their abandonment will save the railroads about \$23,000,000 annually.

4. That the government is not authorized to extend credit to consignees for the amount of the freight they owe when the goods are delivered, and that it cannot exceed its legal authority.

5. That a new and simplified classification and rate book has been prepared and will be effective and available as soon as the shippers themselves approve it.

6. That a continuance of the package car service would

little hope of the adoption of a common standard specification acceptable alike to all the manufacturers and all of the railroads. As a means of indicating the differences in the provisions of the more widely-known specifications, the table has been prepared showing their chemical and physical requirements. We are indebted to C. W. Gennett, Jr., of Robert W. Hunt & Co., Chicago, for this information.

FRENCH LADY ENGINEERS.—The Paris journal *Le Génie Civil*, gives the list of the new students for the engineering school, the *Ecole Centrale des Arts et Manufactures*. There are over 340 students who have passed the examination for admission to the course, the number including six young ladies whose position in the list is a very favorable one. It is probable, adds our French contemporary, that the number of female students will increase in following years, and that young ladies having the required inclination will find in engineering situations worthy of their merits.

Operating Expenses Show Increase of \$461,000,000

AN INCREASE in operating expenses of \$461,694,818 in the first six months of 1918 over the same period of 1917 and an increase in the operating ratio from 71.34 to 87.23 per cent are the features of the summary of railway earnings of Class 1 roads issued by the Interstate Commerce Commission last Saturday. The operating revenues for the six months of 1918 totaled \$2,081,448,000 as compared with \$1,897,930,501 in 1917. The operating expenses, however, were \$1,815,706,527 in 1918, as compared with \$1,354,011,709 in 1917, and the net income was only \$151,657,111 in 1918 as against \$440,050,413 in the first six months of last year.

The figures for June as given in the summary show an increase in operating expenses of \$200,000,000 over June of last year as against an increase in operating revenues of not quite \$50,000,000, this bringing the operating ratio from 67.37 up to 110.62 per cent, and resulting in a net loss during June, 1918, of \$63,000,000. This, however, is largely due to the fact that the operating expenses for June, 1918,

include wage increases representing back pay since December 31, 1917. The reported increases of 164 roads for January to May, inclusive, not previously included in operating expenses, are:

Maintenance of way and structures.....	\$17,505,902
Maintenance of equipment.....	29,726,086
Traffic.....	1,442,531
Transportation.....	79,302,542
Miscellaneous operations.....	849,636
General.....	4,216,504
Total.....	\$133,043,201

If the above amounts were excluded, the operating expenses for June, 1918, would be:

Maintenance of way and structures.....	\$50,185,159
Maintenance of equipment.....	76,670,235
Traffic.....	4,030,950
Transportation.....	159,114,343
Miscellaneous operations.....	3,315,194
General.....	9,189,297
Transportation for investment—Cr.....	452,074
Total.....	\$302,053,104

The railway operating income (item No. 22 of the summary) for June, 1918, would then be \$74,083,538, or \$318 per mile of road against \$427 per mile for June, 1917, and against an average of \$376 per mile for the months of June, 1915, 1916 and 1917.

INTERSTATE COMMERCE COMMISSION—SUMMARY OF MONTHLY REPORTS OF LARGE ROADS

Compilations, subject to revision, from reports of revenues and expenses of steam roads in the United States for the month of June, 1918. (Cents omitted.) This summary covers only roads having operating revenues above \$1,000,000 for the year ended December 31, 1917.* [Includes 180 Class 1 roads and 14 Switching and Terminal Companies.]

FOR THE MONTH OF JUNE UNITED STATES

Item	Amount		Per mile of road operated		Amount		Per mile of road operated	
	1918	1917	1918	1917	1918	1917	1918	1917
1. Average number miles operated.....	233,014.25	231,831.31	.....	.....	59,386.84	59,079.25	.....	.....
Revenues:								
2. Freight.....	\$262,427,763	\$247,318,427	\$1,126	\$1,067	\$125,661,151	\$111,625,305	\$2,116	\$1,889
3. Passenger.....	94,667,475	68,113,521	407	294	41,035,453	30,106,132	691	510
4. Mail.....	4,489,755	4,927,465	19	21	1,735,395	1,941,106	29	33
5. Express.....	9,660,579	9,345,141	42	40	4,728,239	4,534,416	80	77
6. All other transportation.....	10,750,172	10,634,087	46	46	6,377,264	5,860,723	107	99
7. Incidental.....	19,978,472	9,124,516	87	39	6,293,654	5,221,740	106	88
8. Joint facility—Cr.....	489,300	337,949	2	2	282,549	162,405	5	3
9. Joint facility—Dr.....	154,141	131,237	1	1	81,442	73,943	1	1
10. Railway operating revenues.....	393,309,379	349,669,869	1,688	1,508	186,032,263	159,377,884	3,133	2,698
Expenses:								
11. Maintenance of way and structures.....	67,691,061	41,246,833	290	178	28,875,730	17,244,972	486	292
12. Maintenance of equipment.....	106,396,321	55,599,056	457	240	52,767,184	26,999,952	889	457
13. Traffic.....	5,473,481	5,456,985	23	24	2,402,126	2,092,697	40	35
14. Transportation.....	238,416,885	122,990,034	1,023	530	119,445,688	61,377,583	2,011	1,039
15. Miscellaneous operations.....	4,164,830	2,803,174	18	12	1,937,657	1,303,192	33	22
16. General.....	13,405,801	8,173,739	58	35	5,982,840	3,560,078	101	60
17. Transportation for investment—Cr.....	452,074	687,975	2	3	55,579	75,656	1	1
18. Railway operating expenses.....	435,096,305	235,581,846	1,867	1,016	211,355,346	112,502,818	3,559	1,904
19. Net revenue from railway operations.....	**41,786,926	114,088,023	**179	492	**25,323,083	46,875,066	**426	794
20. Railway tax accruals (excluding "War Taxes").....	17,111,004	15,113,722	74	65	7,604,432	5,905,528	128	100
21. Uncollectible railway revenues.....	61,733	64,383	.....	.....	12,981	14,269	.....	.....
22. Railway operating income.....	**58,959,663	98,909,918	**253	427	**32,940,496	40,955,269	**554	694
23. Equipment rents.....	**2,738,702	**2,257,421	**12	**10	**4,716,185	**3,491,390	**79	59
24. Joint facility rent (Dr. Bal.).....	1,628,361	1,533,323	7	7	728,896	652,187	13	12
25. Net of items 22, 23 and 24.....	**63,326,726	95,119,174	**272	410	**38,385,577	36,811,692	**646	623
26. Item 25 without deduction for back pay, January-May, inclusive.....	69,716,475	.....	299	.....	28,483,289	.....	480	.....
27. Ratio of operating expenses to operating revs...%	110.62	67.37	.....	.....	113.61	70.59	.....	.....

August 23, 1918.

SOUTHERN DISTRICT

Item	Amount		Per mile of road operated		Amount		Per mile of road operated	
	1918	1917	1918	1917	1918	1917	1918	1917
1. Average number miles operated.....	42,961.72	42,739.01	.....	.....	130,665.69	130,013.05	.....	.....
Revenues:								
2. Freight.....	\$39,951,822	\$36,288,168	\$930	\$849	\$96,814,790	\$99,404,954	\$741	\$765
3. Passenger.....	17,009,396	9,349,639	396	219	36,622,626	28,657,750	281	220
4. Mail.....	710,719	744,260	17	17	2,043,641	2,242,099	16	17
5. Express.....	1,169,472	1,204,773	27	28	3,762,868	3,605,952	29	28
6. All other transportation.....	718,153	689,176	17	16	3,654,759	4,084,188	27	31
7. Incidental.....	1,369,633	957,913	32	23	3,315,185	2,944,863	25	23
8. Joint facility—Cr.....	91,227	77,744	2	2	115,524	97,800	1	1
9. Joint facility—Dr.....	25,068	24,982	1	1	47,631	32,312	.....	.....
10. Railway operating revenues.....	60,995,354	49,286,691	1,420	1,153	146,281,762	141,005,294	1,120	1,085
Expenses:								
11. Maintenance of way and structures.....	10,589,330	5,682,843	246	133	28,226,001	18,319,018	216	141
12. Maintenance of equipment.....	18,637,728	9,513,937	434	223	34,991,409	19,085,167	268	147
13. Traffic.....	1,068,925	998,090	25	23	2,002,430	2,366,198	15	18

WESTERN DISTRICT

14. Transportation	35,812,240	16,573,360	834	388	83,158,957	45,039,091	636	347
15. Miscellaneous operations	399,609	248,603	9	6	1,827,564	1,251,379	14	10
16. General	2,060,227	1,201,172	48	28	5,362,734	3,412,489	41	26
17. Transportation for investment—Cr.....	55,718	130,210	1	3	340,477	482,109	2	4
18. Railway operating expenses.....	68,512,341	34,087,795	1,595	798	155,228,618	88,991,233	1,188	685
19. Net revenue from railway operations.....	**7,516,987	15,198,896	**175	355	**8,946,856	52,014,061	**68	400
20. Railway tax accruals (excluding "War Taxes")..	2,303,961	2,137,138	53	50	7,202,611	7,071,056	55	55
21. Uncollectible railway revenues.....	27,204	16,647	1	.....	21,548	33,467	.....	.....
22. Railway operating income.....	**9,848,152	13,045,111	**229	305	**16,171,015	44,909,538	**123	345
23. Equipment rents	495,057	1,305,175	11	31	1,482,426	**71,206	11	**1
24. Joint facility rent (Dr. Bal.).....	189,439	180,234	4	4	710,026	700,902	6	5
25. Net of items 22, 23 and 24.....	**9,542,534	14,170,052	**222	332	**15,398,615	44,137,430	**118	339
26. Item 25 without deduction for back pay, January-May, inclusive	13,748,346	.....	320	.....	27,484,840	.....	210	.....
27. Ratio of operating expenses to operating revs..%	112.32	69.16	.....	.....	106.12	63.11	.....	.....

August 23, 1918. *Does not include the Kansas City Terminal Railroad. **Debit item.

FOR THE SIX MONTHS ENDED WITH JUNE

Item	UNITED STATES				EASTERN DISTRICT			
	Amount		Per mile of road operated		Amount		Per mile of road operated	
	1918	1917	1918	1917	1918	1917	1918	1917
28. Average number of miles operated.....	232,949.26	231,840.57	.....	.....	59,379.85	59,073.08	.....	.....
Revenues:								
29. Freight	\$1,434,723,161	\$1,351,575,145	\$6,159	\$5,829	\$639,553,798	\$599,839,098	\$10,771	\$10,154
30. Passenger	448,208,768	360,620,773	1,924	1,556	187,078,008	156,691,514	3,151	2,652
31. Mail	27,121,960	30,654,883	116	132	10,436,794	12,048,566	176	204
32. Express	56,822,417	50,804,460	244	219	27,162,586	23,880,931	457	404
33. All other transportation.....	55,855,140	55,424,407	240	239	31,497,289	31,122,051	530	527
34. Incidental	56,796,191	47,803,933	244	206	31,765,893	26,542,247	535	450
35. Joint facility—Cr.....	2,754,311	1,989,350	12	9	1,437,707	947,907	24	16
36. Joint facility—Dr.....	833,948	742,560	4	3	442,010	442,763	8	7
37. Railway operating revenues.....	2,081,448,000	1,897,930,501	8,935	8,187	928,490,065	850,629,551	15,636	14,400
Expenses:								
38. Maintenance of way and structures.....	287,199,132	218,566,803	1,233	943	123,264,927	90,312,221	2,076	1,529
39. Maintenance of equipment.....	461,399,840	326,384,886	1,981	1,408	226,976,488	157,613,172	3,822	2,668
40. Traffic	27,747,379	32,083,867	119	138	11,448,997	12,057,571	193	204
41. Transportation	967,571,816	717,465,395	4,154	3,095	472,904,427	356,122,719	7,964	6,028
42. Miscellaneous operations.....	18,975,016	16,029,562	81	69	8,931,364	7,339,404	150	125
43. General	55,656,602	46,949,637	239	203	24,754,794	20,583,214	417	349
44. Transportation for investment—Cr.....	2,843,258	3,468,441	12	15	385,925	339,126	6	6
45. Railway operating expenses.....	1,815,706,527	1,354,011,709	7,795	5,841	867,895,072	643,689,175	14,616	10,897
46. Net revenue from railway operations.....	265,741,473	543,918,792	1,140	2,346	60,594,993	206,940,376	1,020	3,503
47. Railway tax accruals (excluding "War Taxes")..	92,237,876	85,400,088	396	369	37,375,157	34,455,729	629	584
48. Uncollectible railway revenues.....	309,190	315,173	1	1	86,924	95,125	1	2
49. Railway operating income.....	173,194,407	458,203,531	743	1,976	23,132,912	172,389,522	390	2,917
50. Equipment rents.....	**13,705,009	**10,457,184	**59	**45	**21,812,150	**20,900,450	**367	**352
51. Joint facility rent (Dr. Bal.).....	7,832,287	7,695,934	33	33	3,594,633	3,893,433	61	65
52. Net of items 49, 50 and 51.....	151,657,111	440,050,413	651	1,898	**2,273,871	147,595,639	**38	2,500
53. Ratio of operating expenses to operating revs..%	87.23	71.34	.....	.....	93.47	75.67	.....	.....
Item	SOUTHERN DISTRICT				WESTERN DISTRICT			
	Amount		Per mile of road operated		Amount		Per mile of road operated	
	1918	1917	1918	1917	1918	1917	1918	1917
28. Average number of miles operated.....	42,967.18	42,737.59	.....	.....	130,602.23	130,029.90	.....	.....
Revenues:								
29. Freight	\$234,528,918	\$210,854,302	\$5,458	\$4,934	\$560,640,445	\$540,681,745	\$4,293	\$4,158
30. Passenger	80,981,322	54,204,872	1,885	1,268	180,149,438	149,724,387	1,379	1,151
31. Mail	4,288,370	4,657,469	100	109	12,396,796	13,948,848	95	107
32. Express	7,511,644	7,292,470	175	171	22,148,187	19,631,059	170	151
33. All other transportation.....	4,537,824	4,245,491	106	99	19,820,027	20,056,965	152	151
34. Incidental	7,481,428	5,589,027	174	131	17,548,870	15,672,659	134	121
35. Joint facility—Cr.....	658,467	449,182	15	10	658,137	592,261	5	5
36. Joint facility—Dr.....	125,058	131,336	3	3	266,880	168,451	2	1
37. Railway operating revenues.....	339,862,915	287,161,477	7,910	6,719	813,095,220	760,139,473	6,226	5,846
Expenses:								
38. Maintenance of way and structures.....	43,224,537	33,133,500	1,006	775	120,709,668	95,121,082	924	732
39. Maintenance of equipment.....	73,717,259	52,344,195	1,716	1,225	160,706,093	116,427,519	1,231	895
40. Traffic	5,174,785	6,148,573	120	144	11,123,507	13,877,723	85	107
41. Transportation	142,773,052	95,679,704	3,323	2,239	351,894,337	265,662,972	2,695	2,043
42. Miscellaneous operations.....	1,793,450	1,645,488	42	39	8,250,892	7,044,670	63	54
43. General	8,398,833	7,017,819	196	164	22,502,975	19,348,604	172	149
44. Transportation for investment—Cr.....	372,895	618,721	9	15	2,054,438	2,510,594	16	19
45. Railway operating expenses.....	274,709,021	195,350,558	6,394	4,571	673,102,434	514,971,976	5,154	3,961
46. Net revenue from railway operations.....	65,153,894	91,810,919	1,516	2,148	139,992,526	245,167,497	1,072	1,885
47. Railway tax accruals (excluding "War Taxes")..	13,425,563	12,730,537	312	298	41,437,156	38,213,822	317	294
48. Uncollectible railway revenues.....	75,039	68,315	2	1	147,227	151,733	1	1
49. Railway operating income.....	51,653,292	79,012,067	1,202	1,849	98,408,203	206,801,942	754	1,590
50. Equipment rents.....	1,963,587	8,559,966	46	200	6,143,554	11,883,300	47	15
51. Joint facility rent (Dr. Bal.).....	1,140,157	1,058,517	27	25	3,097,497	12,743,984	24	21
52. Net of items 49, 50 and 51.....	52,476,722	6,513,516	1,221	2,024	101,454,260	205,941,258	777	1,584
53. Ratio of operating expenses to operating revs..%	80.83	68.03	.....	.....	82.78	67.75	.....	.....

**Debit item. †Excludes figures for Wabash Pittsburgh Terminal Ry. ‡Excludes figures for Colorado Midland Ry., Missouri Pacific Ry., and St. Louis, Iron Mountain & Southern Ry. for five months ended May 31, 1917.

Private Car Lines to Receive One Cent a Mile

Interstate Commerce Commission Finds This Rate Necessary to Help Compensate for Increased Costs

THAT THE ALLOWANCE paid by railroads for the use of privately owned tank cars should be made one cent a mile instead of $\frac{3}{4}$ cent and that this increase should also be applied to other privately owned cars; that greater care should be taken to return private cars belonging to small owners and that carriers should operate enough icing plants of their own and not permit the big packers to ice their competitors' shipments, are the leading points in a decision of the Interstate Commerce Commission issued on Thursday of last week.

The decision contains much information as to the use of privately owned cars. It shows how they first came into use and of what great value they are to their owners and the point is made that they serve an important duty in transportation and could not well be dispensed with.

The decision bears the title "In the matter of private car lines" and will be found in 50 I. C. C. 652. It follows a detailed inquiry instituted in 1912 as to the rules, regulations and practices governing the operation of private cars. The length of time which has elapsed is a result of delay caused by court proceedings, one relating to the jurisdiction of the commission and the other to the power of the commission to require carriers to supply cars to shippers.

The Commission's Findings Summarized

The commission's findings are summarized in the report as follows:

1. As the situation now exists, and under the circumstances and conditions shown of record, shippers may continue to lease cars from sources independent of carriers by railroad.

2. A charge in addition to freight rates should not be made for furnishing to shippers refrigerator, tank, or other special type of car, or for transporting their shipments therein, unless the freight rates are predicated on the transportation in another type of car less expensive and not so difficult to operate.

3. Payments should be made by carriers on the basis of the loaded and empty mileage, and mileage should be computed on the basis of distance tables without the elimination of mileage through switching districts.

4. There should be no increase in the present payment for use of refrigerator cars and so-called meat cars for transportation in that part of the country east of El Paso, Tex., Albuquerque, N. Mex., and Salt Lake City and Ogden, Utah.

5. The present payment of $\frac{3}{4}$ cent on the loaded and empty movements for the use of tank cars of all kinds by all carriers by railroad should be increased to 1 cent per mile for the loaded and empty movements; the increased allowance should be paid for the use of live poultry cars, palace stock cars and heater cars, but the increase should not apply to stock cars, coke cars, coal cars, rack cars, flat cars, box cars, or pocket cars, although they may be privately owned or leased.

6. Carriers should publish in their tariffs a rule that private cars when unloaded at destination, unless otherwise ordered by the owner or lessee, must be promptly transported, loaded or empty, in the direction of the plant of the owner or lessee.

7. Where carriers own tank cars which are furnished to shippers on request, they shall publish in their tariffs rules for the distribution thereof whereby each shipper who makes

reasonable request may receive his proportionate share of available cars.

8. Re-icing charges on shipments of fresh meat and packing-house products and dairy products should be based on the cost of the ice and salt used, the labor, investment in icing plants, etc., together with a reasonable profit. The carriers only should perform the service of re-icing and make charges therefor; and shippers of these products should not be permitted to perform the service of re-icing their own and competitors' shipments en route, either directly or through corporations controlled by them.

9. Tariffs of carriers be so changed that private cars standing on the private tracks of their owners shall not be subject to demurrage charges.

10. The Master Car Builders Association rules need not be filed in tariffs of carriers; and suggestions made at the hearing as to modifications in rules and practices should be adopted by the association.

Abstract of the Report

On January 1, 1913, there was a total of 137,179 cars of all kinds owned by private interests, including those owned by railroad-owned car lines. On January 1, 1918, this number had increased to about 200,000, including approximately 70,000 tank cars, 65,000 refrigerator cars, and about 65,000 other privately owned cars, including stock, coal, poultry, heater, palace stock cars and box cars. At a conservative estimate the amount of money invested in these cars is \$250,000,000. In addition to this, large sums of money have been invested by owners in the construction of repair plants, side tracks, etc. The great increase in the number of privately owned cars in the last three years has been relatively larger than in any similar previous period, due to congestion on the railroads and the necessity for having more cars to handle the same amount of traffic. The number of tank cars in particular has increased greatly.

Allowances Paid by Carriers

Allowances paid to private car owners have always been on a mileage basis. From 1867 to 1873, the rate was from $1\frac{1}{2}$ to 2 cents per mile on all cars; 1873 to 1877, from 1 to $1\frac{1}{2}$ cents; in 1877, it was made from $\frac{3}{4}$ of a cent to 1 cent; in 1893, an allowance of 1 cent was fixed for refrigerator cars west of Buffalo, N. Y.; in November of that year, the rate was made 6 mills on all cars except private refrigerators, which were allowed 1 cent by western carriers and $\frac{3}{4}$ of a cent by eastern carriers generally. There were some modifications of the allowances in the east. On October 1, 1917, the allowance for refrigerator cars is 1 cent per mile on the east of the Mississippi river became 1 cent. At this time, the allowance for refrigerator cars is 1 cent permile on the loaded and empty movements between all points east of El Paso, Tex., Albuquerque, N. Mex., Salt Lake City, and Ogden, Utah. The territory west of the described line is known as the transcontinental zone. In that zone, on shipments requiring refrigeration in private cars for distances of 800 miles or less, the payment is 6 mills per mile; excess over 800 miles, $\frac{3}{4}$ of a cent; when loaded with freight not requiring refrigeration, 6 mills, regardless of distance; and when moving empty, no allowance.

The allowance on live poultry cars is generally $\frac{3}{4}$ of a cent, although there are a few exceptions when 6 mills is paid. On palace stock cars, except when moved in passenger

trains, the allowance is on the basis of 6 mills per mile, with the exception of many railroads in the southeast, which allow $\frac{3}{4}$ of a cent. The allowance for tank cars is uniformly $\frac{3}{4}$ of a cent for loaded and empty movements. For use of all other cars, including coal, coke, stock, and box cars, the allowance is 6 mills per mile. None of the allowances include movements within the switching limits, as defined by carriers, within terminals.

Operation of Private Cars

From the fact that private car owners have an interest in the prompt movement of their cars, such cars move more rapidly, and also move empty to a greater extent than the same kind of cars owned by carriers.

Most perishable freight moves from the west, southwest, south and southeast to the northern and northeastern sections of the country. There is very little perishable freight available for return loading. Railroad car lines utilize their cars to as great an extent for return loading as possible. Private car owners object to return loading of their cars, if by so doing, the return movement is delayed. There are many articles that can not be loaded into refrigerator cars, especially meat cars, because of odor, or because the dampness in the car would not permit of such loading.

Tank cars are not generally loaded for return movement, and with some exceptions move empty half the total mileage. The Union Tank Line serves so many concerns with numerous refineries and stations in all parts of the country that it occasionally happens that loads may be found for movements in both directions. As a rule, private cars designed to transport acids, vinegar, wine, etc., move empty on the return.

The Duty of Carriers

It is well-settled law that the duty of a common carrier is to furnish equipment for transportation of articles it advertises to carry. The general duty of carriers at common law, and under the act, is to furnish such cars and other facilities as are reasonably necessary to enable them to fulfill their public obligations. It has been held that in the absence of discrimination the power to enforce the duty does not reside with the Commission. In this proceeding the question of where the power resides to enforce the duty is not necessarily involved. In section 15 of the act it is provided that if the owner of property transported directly or indirectly renders any service connected with transportation, or furnishes any instrumentality therein, the charge and allowance therefor shall be no more than just and reasonable, and that the Commission is empowered to determine what is a reasonable charge as a maximum to be paid by the carrier or carriers for the service rendered, or for the use of the instrumentality furnished. An amendment to section 1 of the act, approved May 29, 1917, provides as follows:

The Commission shall, after hearing, on a complaint or on its own initiative without complaint, establish reasonable rules, regulations, and practices with respect to car service, including the classification of cars, compensation to be paid for the use of any car not owned by any such common carrier, and the penalties or other sanctions for non-observance of such rules.

The Congress has thus recognized the use of privately owned cars in transporting the commerce of the country, and has provided for their control by the Commission through rules and regulations of carriers hauling them.

For more than 30 years privately owned cars have been extensively used to transport commodities in interstate commerce. They came into use originally because the railroads would not, or did not, supply them in sufficient quantities to meet the demand. Practically all carriers have refused to furnish tank cars for transportation of oil and other liquids, or cars with brine tanks and racks for transportation of carcass meat. There are certain exceptions to this rule. Refiners of petroleum oils with substantial unanimity state that

as a practical matter carriers could not furnish tank cars in a manner to insure their efficient use. The packers, who are the largest users of refrigerator cars, including meat cars, state that they are perfectly willing that carriers should own all cars used by them, "provided they are insured at all times an adequate supply." The proviso qualifies their acceptance of the principle to the extent of practically nullifying it. If all cars were owned and furnished by carriers, in times of shortage the packers, as well as all other shippers of like traffic, would be entitled to no more than their fair share of all cars available. No class of cars in railroad service is used more effectively than the cars owned by large shippers. They have organizations of men to see to it that their cars move as promptly as possible, both loaded and empty. The carriers of the country could not as effectively handle the entire refrigerator and tank-car equipment as is now done by the intervention of private owners. The car lines have forces of experts to watch the crop prospects and to advise as to the needs of particular sections of the country, to secure cars and see that they are on hand for the transportation of all sorts of products in refrigerator cars. If there is a crop failure in one section of the country, the cars are sent to other sections, and are kept actively in use to the highest degree possible. The oil refiner produces certain kinds of oil and desires to reach certain customers. No carrier could inform itself as to his needs and insure that he would have the kind and number of cars to enable him to conduct his business economically and efficiently. If private ownership or control of cars of particular types results in greater economy and more efficient use, the whole public is to that extent benefited.

In the beginning, carriers could no doubt have insisted upon their right to furnish all equipment. They did not do so, and in the course of years there has grown up a system of private ownership of such magnitude and importance that it must be reckoned with as an existing condition.

The system of the use and supply of private cars that now exists can not be at once and radically changed, without serious consequences to shippers, carriers and the public. At the hearings an endeavor was made to secure evidence with respect to normal transportation conditions. The abnormal conditions of last fall and winter are admittedly not such as would indicate what would be just and reasonable practices, as a general rule, for carriers, shippers, private-car owners or the public.

How Should a Shipper Secure Cars?

As a general principle, a shipper of traffic over the railroads of the country ought not to be required to deal with any other than the carrier. If the carrier has not the kind of a car in general use that is demanded by a shipper, the most simple and direct method is for the former to secure it from some source and furnish it, but the custom has been otherwise with respect to certain kinds of cars. In many cases, shippers are under compulsion to furnish cars by reason of carriers' failure to supply them upon request. In practice, the shipper either buys the cars used by him, or rents them from concerns engaged in the business of supplying cars. If a request were preferred to a carrier for a kind of car it did not own, considerable delay might occur before it could be secured. To a shipper of perishable products or a shipper who is bound by a short time contract, such delay might cause serious loss. So far as the carrier is concerned it can make no difference whether the shipper is owner or lessee. So far as the shipper, or the relation of one shipper to another is concerned, there may be a marked difference between an owner and a lessee.

Some car companies engaged in the business of manufacturing cars and supplying them to shippers for use in transportation have and take a vital interest in the movement of such cars by carriers. They enter into contracts with ship-

pers to supply them with all the cars needed for a certain period, usually a term of years. Men are employed whose duty it is to keep posted as to the location of all cars, so that demands of patrons may be most expeditiously and economically met. There can be no doubt but that this method of handling the business leads to a highly efficient use of cars.

Larger owners have organizations to look after the movements of cars and this promotes their prompt movement en route and through terminals. They have representatives at important junction points who advise as to movements and look after the prompt handling of cars.

As before stated, it is undoubtedly in the interest of all shippers that needed cars should be secured from the carrier direct, but so long as the system of the use of privately owned and operated cars continues to play so important a part in transportation by railroad in this country, and so long as carriers fail to provide themselves by ownership or lease with cars to transport so important a part of the commerce moving over their lines, there seems to be no sound reason why shippers should not continue to secure cars through independent car companies. The need is to secure the largest use of all freight equipment, and the car companies have been an important agency in this regard.

Should Car Owners Publish Their Charges to Shippers?

Charges of car owners to shippers range from \$15 to \$150 per car per month. The lower charges are on unexpired long time contracts and will not be renewed under present conditions. Five years ago, the average rental charge was about \$30 per month. In 1917, the average contract was made at \$85 per month. Except as to a few car companies, there is no regularity with respect to charges car owners make for equipment leased or furnished shippers. The amount of the charge seems to be measured by the needs of the particular shipper. During recent months there has been such a demand for cars that owners admit that they have received very high prices for single trips or other short time use. In normal times there is not such demand, and the charges are much less.

Under the law as construed by the courts, car lines and others engaged in leasing cars to shippers are not common carriers and thus do not come under direct control by the Commission. When a car, regardless of ownership, is being moved in interstate commerce by a common carrier subject to the act, there is no doubt of our power to control the carrier's operation of the car so that there shall result no undue preference to any shipper. The act does not impose on common carriers the obligation to haul private cars in interstate commerce. If private cars are used, they must be under an arrangement stated definitely in tariffs. *Procter & Gamble Co. v. C. H. & D. Ry.*, 19 I. C. C., 556, 560.

No one has complained, so far as this record shows, of the amount of the charges for lease of cars, or that the charges are applied in an unjustly prejudicial manner. As a means of removing undue prejudice or unjust discrimination we have the right to require the carrier to provide specifically in its tariffs the terms under which all similarly situated shippers may demand and secure upon even terms the use of cars employed upon the carrier's line. We do not feel that on the facts of this record or under present conditions the requirement should be ordered.

Should a Separate Charge for Special Cars Be Established by Carriers?

This was one of the questions that was thoroughly discussed at the hearings and is fully considered on brief. The first difficulty is to define "special equipment" or "special car." Carriers define "special equipment" to be that which "does something to the freight," or that which has a value to the shipper over and above the mere hauling, the defini-

tion to apply to a car furnished by a shipper as well as one by a carrier.

In substantially all rate cases of any importance that have been considered by the Commission relating to articles transported in refrigerator or other cars of peculiar type, carriers have defended their rates by showing more or less in detail that the commodities are transported in such cars, of greater weight, and more expensive to operate than ordinary cars. These facts thus called to the attention of the Commission have not been ignored in passing upon the reasonableness of the rates in issue in the particular cases. Certain articles were not transported in appreciable quantities, and from certain parts of the country not at all, until after the refrigerator car was perfected, and freight rates were made with a view to transportation of such products in that kind of a car and in no other. The wide diversity of traffic and the special transportation that many carriers perform would make a car special in one section of the country, or over one railroad, that would, in another section or over other railroads, be an ordinary car.

Many of the rates now published by carriers include the transportation of articles in cars for the hauling of which carriers here assert they are entitled to extra compensation. It would be practically impossible to determine what rates do or what do not include the hauling of commodities in special types of cars. Any attempt to state separate charges of the nature proposed would be a prolific source of litigation, and, in many instances, would impose unjust and unreasonable charges on shippers or receivers of freight.

Basis of Compensation for Use of Private Cars

When a shipper furnishes his own car for transportation of articles in common use and which move in large volume, he relieves the carrier of so much of its obligations as a common carrier. This is true whether the shipper furnishes the car as owner or lessee. Carriers recognize this and make allowances to the owner or controlling shipper, as before stated, for the use of such cars. The question here to be considered is as to the basis of the allowance or payment, therefore. When this case was first heard, the only power of the Commission to regulate payments by a carrier for an instrumentality of transportation furnished by the shipper was the power given in section 15 of the act to determine what is a reasonable charge as the maximum to be paid by the carrier. This provision was directed to the prevention of rebates by way of excessive allowances to shippers, and has never been considered as granting power to fix a reasonable amount as an initial proposition as payment for the use of the car. The act of May 29, 1917, hereinbefore referred to, grants power to the Commission to fix the compensation to be paid for the use of any car not owned by the carrier.

Carriers contend that the amount paid for the use of shippers' cars should not exceed that sufficient to cover repairs and depreciation, and that therefore some of the allowances are now too high. Car owners contend that the allowance or payment now made for the use of their cars is too low, and that it should be in such an amount as to provide for maintenance, depreciation, cost of operation, taxes, and a reasonable interest on the investment.

The amounts paid by carriers for the use of tank cars or refrigerator cars does not permit of the operation of any of them at a profit considered reasonable by owners, and has not during any time during the last six years; and some of them were and are operated at a loss, taking into account a return on investment, cost of repairs, maintenance, and depreciation.

It is clearly established that shippers of petroleum oils, fresh meat, packing-house products, and dairy products could not have done the volume of business they have done in the past, or that their plants were constructed to do, ex-

cept they had possessed themselves of private cars over which they could exercise, and have exercised, control. The oil refiner and meat packer demand an adequate supply of cars at all times. It is conceded by shippers that neither an adequate supply nor its efficient distribution can be afforded by carriers. The requirement has been that there shall be the most efficient use of tank and refrigerator cars, which has been one of the results of private ownership. While this has undoubtedly been of benefit to carriers, it has been of incalculable benefit to shippers as well.

The allowance that shall be paid for the use of private cars under all the circumstances and conditions shown must be considered on the average. There can not be, with propriety, as many different rates of payment as there are owners with varying ability to efficiently handle the cars with respect to mileage earnings, repairs, and depreciation, nor can there be as many rates as there are different kinds and grades of privately owned cars. Representatives of carriers assert that a proper basis is payment for repairs and depreciation. Carriers should at least pay for repairs and such depreciation as occurs while the car is in railroad service. The amount of depreciation can not be determined with accuracy. The attempt to fix a stated basis of allowance for use of privately owned cars would by no means result in justice to all owners or to all carriers. The experience through many years under normal conditions has dictated certain allowances which have been accepted by owners and carriers. Changed conditions have led to an attack upon the allowances now paid by carriers. No attempt will be made here to fix what shall be a reasonable basis from which the amount of the allowance to be paid by the carriers shall be ascertained. This phase of the case will be considered in the light of past experience and the evidence of record.

How Should the Compensation Be Determined?

Substantially all parties to this proceeding agree that the mileage basis upon which payments are made for the use of private cars should be continued.

There is no serious difficulty in making settlement as between owner and carrier on the mileage basis. Under present rules, loaded and empty mileage is equalized as regards routes of movement. That is to say, the shipper is required to give each route, or each carrier in the route, a loaded mile for each empty mile of haul, under penalty of paying rates for hauling empty equipment only, which range from 4 cents to 10 cents per mile. Whether under unified operation, should it become permanent, some other rule in this regard may be necessary, is a matter that can not be determined here. Under normal conditions the mileage basis secures to the owner payment for the operation of his car. That is what he is entitled to and it is that for which the carrier should pay.

Deductions from mileage by private cars through terminals are now made. Mileage is calculated from switching limits to switching limits. It is the general rule not to make payment for the movement through switching districts of important points. Many years ago when switching limits were not as extended as today, the matter was of no especial importance. Today it is possible to have a movement through Chicago of over 30 miles within the switching limits, and 10 or 12 miles is by no means uncommon in other cities of the country. Car owners do not urge that payment be made for the use of their cars in switching service. Their demand is that they receive payment for line hauls. This is reasonable, and is not objected to by carriers. The computation of mileage as a basis of payment for private cars should be upon the distance of the haul, reference being made to the distance tables established by the carriers. The practice with respect to such payments should, of course, be made uniform.

Amount of the Compensation

It is conceded by car owners that they are not properly entitled to make a profit on their cars used by carriers. They demand, as a rule, that the entire cost to them, together with interest on their investment, shall be covered by payment for their use. A return sufficient to pay all costs, including interest on the investment, has not been realized from the payments or allowances now made by carriers.

Since 1912 the cost of cars and repairs has materially increased, and there has been little change in the mileage earnings. If anything, during 1917 the movement has been less than in previous years because of congestion, embargoes, etc. While the figures are not at hand, priority orders that have been given for shipments of food products to the Atlantic seaboard for shipment abroad have not so materially affected the mileage earnings of the packers during recent years as compared with other private car earnings.

Owners receive larger returns for refrigerator than for tank or other kinds of cars. The reason for this is that perishable freight requires rapid transportation to prevent deterioration. It moves in the fastest freight trains of all carriers. Packers and car lines who are largely engaged in shipping perishable commodities insist on the prompt movement of their cars, both loaded and empty. Tank cars do not usually move with equal rapidity. The shipments are not perishable and do not require expedited movement, nor do they ordinarily get it, except in special cases. Large users of tank cars, however, have organizations to keep the cars on the move as continuously as possible. The packers have branch houses in all important cities of the country to which shipments are made in large quantities. For example, Swift & Co. have 450 of such branch houses. The shipments of the packers to New York and for export constitute about 25 per cent of the total.

The cost to the carriers of moving tank cars or refrigerator cars has not been determined. The average tank now in use holds 8,000 gal., and the average load weighs 55,000 lb. The average load in a refrigerator car weighs about 30,000 lb. Including the ice, the weight would be about 34,000 lb. The service of the carrier on the loaded movement of a tank car is greater than on a refrigerator car, and the average earnings are also greater. A proportion of refrigerator cars contain return loads, and tank cars return empty in most instances. The investment in a tank car is about the same as in a refrigerator car, and repairs by the owner to a refrigerator car usually exceed those to a tank car.

Owners of tank cars contend that the rate was fixed many years ago when the cars cost about \$1,000; and that if the allowance was proper at that time, it is inadequate now when cars, even on a normal basis of charges, cost from \$1,500 to \$1,600. The cost of repairs and maintenance of tank cars has steadily increased. The same is true of refrigerator cars. As before stated, the average carload of oil today weighs about 55,000 lb. Twenty years ago the average load was about 24,000 lb. In other words, the average load has increased two and one-half times, and the revenue of the carriers per car mile has more than doubled.

Cars purchased in the latter part of 1917 cost on the average about \$3,700. The marked increase is due to increased costs of material and labor and is not a measure for costs in normal times.

A large owner of tank cars testified that the average cost of tank cars in 1913 was \$1,100, and in 1917 prices ranged from \$1,650 to \$3,755 per car during the earlier and latter parts of the year. He stated that under the $\frac{3}{4}$ of a cent allowance the average earnings in 1914 were \$63.09. The cost of maintenance, including depreciation, plus 6 per cent on the actual cost less depreciation, amounted to \$158.74 per car; that is to say, during the year 1914, the mileage failed to pay expenses and a 6 per cent return on the investment

by \$95.65 per car. In 1914, in order to secure a return of 6 per cent on depreciated investment, and to pay operating expenses, the mileage allowance should have been 1.89 cents; in 1916, 1.65 cents; and in 1917, 1.75 cents. The Union Tank Line Company shows that the average cost of repairs to its cars in 1914 was \$65.07, and that depreciation at 5 per cent was \$42.70, a total of \$107.77. At 1 cent per mile, the average earnings of its cars would have been \$91.97, or \$15.80 less than cost on the basis stated. In 1917, according to returns from this company, the average cost of repairs was \$49.07 per car; depreciation at 5 per cent, \$42.58 per car; and the mileage earnings were \$90.87 per car. It is stated that much of the equipment is new, and repairs are on a minimum basis.

In figures set out in the appendix, the earnings of Swift & Company on refrigerator cars in the year 1912 appear. This company may be taken as representative of the packers. The returns from mileage received by them are the highest of any refrigerator cars in private ownership. The following table gives the average earnings and depreciation at 5 per cent on the average value per car, together with the total for the years 1915, 1916 and 1917:

Year	Cost	Mileage earnings	Repairs	Depreciation	Total depreciation and repairs
1915.....	\$896.36	\$191.10	\$138.81	\$44.82	\$183.63
1916.....	916.34	204.52	158.71	45.81	204.52
1917.....	890.09	197.51	186.77	44.50	231.27

Discrimination in Use of Private Cars

Because of their superior organization, and their ability to give carriers tonnage, the leading packers of the country have been able to secure better use of their cars than some of their competitors. These great shippers of perishable articles have used to the fullest extent their splendidly effective organizations to secure prompt service for their cars used in shipments of their products. Smaller competitors who have not, and can not afford to have, such organizations, have secured very much less efficient service from the private cars they own or control.

The failure to return cars to the smaller packers is due to the neglect of a lawful duty by carriers. The obligation to treat each shipper fairly, no matter how small his shipments may be in comparison with those of another shipper, is one carriers cannot escape. Whether under the terms of the act the carriers have been guilty of unjust discrimination in the cases referred to, can not be determined on this record. The duty imposed on the carrier by law is to give equal treatment to all shippers who are in position to demand it. Where the same carrier or carriers serve two shippers, who, by their location, the character of their output, and distance from markets where their products must be disposed of, are in substantially similar circumstances and conditions, the serving carrier or carriers can not lawfully prefer one to the other in any manner whatsoever.

Meat packers everywhere are under compulsion, if they are to ship carcass meat, to supply themselves with cars, and carriers transport them under arrangements with the shippers. If the carriers were required to publish in their tariffs a rule to the effect that private cars when unloaded at destination, unless otherwise ordered by the owner or lessee, will be promptly transported, loaded or empty, in the direction of the plant of the owner or lessee, doubtless much of the apparent injustice hereinbefore referred to would be avoided. A rule similar in terms to that suggested was applied by carriers with respect to foreign cars on their lines previous to April 26, 1917, but it was not applicable to private cars.

Shippers of oil in tank cars are required to furnish the cars, and many shippers of perishable products other than fresh meat find it necessary to own or control cars, because they can not in any other manner secure an adequate supply. The suggested rule should apply to all private cars in order

to prevent discrimination, and to secure to owners such use of their cars as their necessities may require.

Railroad Owned Tank Cars

Carriers throughout the country generally have provisions in their tariffs which name rates on petroleum oil and other liquids in tank cars that they are not under obligation to furnish such cars. Other carriers provide that shippers must furnish tank cars. Notwithstanding this many of them have cars which are used in commercial service. For example, the Pennsylvania Railroad system owns 448 tank cars, and rates named for transportation of liquids in tank cars are governed by the official classification, which provides that

In prescribing ratings in this classification for articles in tank cars the carriers whose tariffs are governed by this classification do not assume any obligations to furnish tank cars.

The Atchison, Topeka & Santa Fe system owns 2,965 tank cars and leases 100, making a total of 3,065. Its rates on articles transported in tank cars are governed by the western classification, which provides that

Where the classification provides ratings on commodities in tank cars such ratings do not obligate the carrier to furnish tank cars in case the carrier does not own, or has not made arrangements for supplying such equipment.

Carriers which own tank cars should be required to distribute those it furnishes to shippers in accordance with rules and regulations published in tariffs whereby each shipper who makes reasonable request may receive his fair and proportionate share of the available cars.

Refrigeration Charges

As a rule, charges for refrigeration of fruits and vegetables are in stated amounts per car, per mile, or per package, for the entire service from origin to destination. It is also a rule that charges for refrigeration of fresh meat and packing-house products are based on a rate per ton of ice and salt furnished. This statement applies to substantially all shipments east of the transcontinental zone. From Missouri river territory to north Pacific coast, Spokane, and Montana territories, the charges are based on a stated sum per car for the service. *Westbound Transcontinental Refrigeration Charges*, 34 I. C. C., 140. Practically all dairy products, including eggs, dressed poultry, butter, oleomargarine, and cheese in certain territories, move under tariffs which name the freight rates for transportation, including refrigeration. In other territories they move under charges for the ice furnished or under stated charges.

The rates for fruits and vegetables are named in stated amounts for the through service. The car line receiving the charge is required to pay certain carriers for ice furnished.

In 1914, 151 railroads reported that they owned and operated 1,347 icing stations. During the same year Armour interests operated 29, Swift & Company 6, and 4 were jointly owned by Swift & Company, Armour & Company, and Morris & Company. The exact number now owned and operated by carriers and others does not appear, but it is stated that there has been no substantial change since 1914.

Some of the great packing concerns of the country now operate directly, or through corporations they control, a number of icing stations at which they re-ice their own shipments, as well as those of competitors, and any perishable commodities that require re-icing en route at those stations.

At all stations in official classification territory, with two exceptions, where re-icing is done for shipments of fresh meats by the packers for railroad companies, the latter pay the former \$2.50 per ton of ice furnished. Rates for re-icing are published in tariffs of the carriers, but the icing stations operated by the packers are competitive with similar stations operated by carriers. There can be but one conclusion reached from a consideration of these facts, and that is that

the packers have so located their icing stations that in the past whatever rates they have been willing to accept for the service of re-icing control the rates for re-icing with respect to the movement of fresh meats and packing house products.

It is insisted by carriers generally that it is necessary, in order to prevent discrimination, that charges for refrigeration should be a stated sum in cents per 100 pounds of freight transported. That is to say, that carriers as a rule in this proceeding advocate that refrigeration charges should be a stated sum in cents per 100 pounds of freight hauled in each car, based on the carload minimum; and that for less-than-carload shipments there should be a stated sum for the entire service in cents per 100 pounds for the tonnage hauled, with a minimum charge per shipment which should be the equivalent of the less-than-carload charge for 100 pounds.

The railroad-owned car lines are of the opinion that the refrigeration charge should be either based on the freight transported, or on a per car basis.

It is stated of record that there are now no stated refrigeration charges published based on the weight of the freight hauled. There are charges now in effect based on the package and distance of the haul. The Commission has approved stated charges on a per car basis in transcontinental service.

Shippers were of opinion that it would not be possible to fix refrigeration charges with reference to the lading of the car, without discrimination; that such charges would require a shipper to pay for maximum refrigeration in a car furnished by a carrier twice as much in the case of a 60,000-lb. load as for 30,000-lb. load; and that the charges would vary with each load shipped, although the service rendered by the carrier, so far as the refrigeration is concerned, would be the same with respect to each load.

There are some practices connected with re-icing service now performed by carriers with respect to shipments of fresh meat, packing house and dairy products, that should be changed. The larger meat packers are engaged to a considerable extent in shipping dairy products as well as products of their meat-packing plants. As heretofore explained, considerable re-icing service in official classification territory through which shipments pass on their way from west to east and southeast, is performed for the railroad either directly by the packers or by corporations they control. Whenever transportation service of this character is farmed out by the carrier to a shipper, who renders the service with respect to his own shipments, as well as those of competitors, there may be, and there quite likely are unlawful results. A meat packer located on the Missouri river, and by no means an insignificant concern, measured by the volume of its shipments, complains vigorously that re-icing performed by a competitor at an interior point in official classification territory is not satisfactory, and that its competitor has access to the billing and is advised of the character of the shipments and to whom they are made, contrary to the provisions of section 15 of the act. The evidence is not clear as to particular instances of improper icing, but there can be no doubt that access to the billing of a shipper by another and a competitor is unlawful. If the shipper who renders the service makes a profit therefrom, there at once arises the question whether such profit does not amount to a concession to him from the rates he pays on his own traffic.

Aside from these considerations there is dissatisfaction and unrest amongst competing shippers when disputes as to the amount and character of icing is referred to one of them who rendered the service. The situation obtains when the icing is done by a corporation controlled by a competitor as well as when it is done directly by the competitor. Of course, there can be no valid objection to carriers doing by an agent what they may do themselves, where such agent is not a shipper or otherwise interested in transportation of the articles with respect to which the service is rendered.

This record does not contain evidence sufficient to determine what would be a reasonable charge for service of re-icing fresh meats, packing house, and dairy products, but it does indicate that it is now being performed by carriers at less than cost. Charges for the service should be upon a just basis considering the costs proper to be included such as salt, ice, labor, etc., together with a reasonable profit.

Demurrage on Private Cars

Under the existing tariffs of carriers private cars are made the subject of demurrage when standing on private tracks of owners. It is agreed by both carriers and owners that tariffs should be so worded as to exempt a private car from demurrage under such circumstances. It was stated that provision would have been made some time ago for such exemption except for the difficulty of determining who was the owner of a car. It was agreed that a shipper who leases a car for a term is to be considered the owner during such term, and that a stencil mark on the car as defined in tariffs should be conclusive as to ownership for purposes of exemption from demurrage.

Master Car Builders' Association Rules

During the hearing private car owners made complaints which were chiefly directed to the fact that carriers did not render bills for repairs promptly; that evidence as to improper repairs, or repairs that had been charged for but not made was not permitted to overcome the statement of the repairing carrier; that cards formerly attached to cars showing repairs made at the time were not now sent with the cars; and that private car owners did not have representation on the executive or arbitration committees.

There is no serious complaint as to the rules regarding the making of and charges for repairs. The general disposition of car owners was to conform to the rules if they are faithfully observed. Some private car owners desire that the Commission require carriers to publish the rules in their tariffs and have them observed accordingly. Aside from the question of jurisdiction of the Commission over operations of carriers in this respect, carriers object to such filing on the ground that the effect would be to set the rules as they now are so that necessary changes could not be promptly made. Application to the Commission for permission to make changes which might be required would delay operation, and complicate a system which as a whole has operated satisfactorily. Many private car owners were not in favor of the publication of the rules in tariffs.

A representative of the Master Car Builders' Association stated at the hearing that there appeared to be no objection to returning to the practice of attaching repair cards at the time the repairs are made to the cars of private owners, provided that the bill was not nullified if the card was lost or destroyed. To this, car owners agreed, and it is suggested by them that there be attached to their cars a steel pocket or other receptacle in which the repair card might be placed. The representative of the association also stated that there is no good reason why representatives of private car owners should not be on all committees of the association, including the executive and arbitration committees. He further stated that every effort would be made to induce carriers to render repair bills more promptly, and that disputes as to improper repairs or repairs charged for but not made would and should be decided by the arbitration committee under the facts of each case presented and in accordance with the weight of the evidence.

These suggestions were approved by the private car owners, and if they are adopted, many troublesome and harassing disputes growing out of bills for car repairs will be at an end.

Doings of the United States Railroad Administration

Director General Visits Long Island Terminals; Allocation of New Cars; Employees and the Draft

WASHINGTON, D. C.

DIRECTOR GENERAL McADOO spent the latter part of last week at New York inspecting the railway terminals on Long Island and in New Jersey. He is spending this week in Washington, but is expecting to start out again next week on another inspection trip. New England, in particular, is expected to receive early attention. Carl Gray, director of the division of operation, and Frank McManamy, assistant director in charge of mechanical matters, visited New England last week and returned with favorable reports. The mechanical situation, in particular, is reported as much more favorable this year than last year at this time.

The Director General Interviewed

While he was in New York, the director general was asked in an interview if he thought government regulation was here to stay and would result in government ownership. No one could foretell that, he said in reply, and expressed his belief that the people would settle that in their own way at the proper time. However, he added, he hoped to demonstrate the benefits of a unified system of control.

Mr. McAdoo also spoke on the war time passenger service and said that in his opinion traveling conditions on the railroads were not so bad as some people would have it believed.

The director general also said:

"I familiarized myself in a general way with the Long Island terminals today, and I want to say that they are becoming increasingly important because of the army and navy supplies handled there. I found the situation very satisfactory, and the work on the storage warehouses is proceeding wonderfully. Splendid progress has been made. The whole Long Island situation is good.

"Of course we are terribly short of passenger cars all over the country, and particularly on Long Island, but the pressure on the equipment on Long Island is so great because of the military camps. It is hard to meet all the demands for war service, and at the same time maintain all passenger service up to normal. The purpose of the Railroad Administration is to give sufficient and efficient passenger service consistent with the paramount needs of the war. Wherever an apparent impairment results, it springs not from the desire to make the service inefficient, but because war demands make it unavoidable.

"When the people are inclined to question some things they must remember that the curtailment of passenger service on the railroads of the country was a war necessity. They must remember that the demands on the railroads have never been so great and that the facilities of the country are taxed as never before. Aside from the movement of troops, there is, of course, a supreme demand for the movement of freight. So that it is evident that every unnecessary passenger train would absorb so much man power, coal, necessary locomotives, and other needs. Then, of course, there is a great amount of steel required for the necessary purposes of war, so that not so much of it as we might perhaps desire can be turned to account in the way of passenger trains.

"One thing we did was to raise rates, which we thought would cut down travel, but the result has not been what we anticipated. We think it fair to penalize a man for taking a Pullman and to eliminate the needless hiring of sections."

In reference to the Railroad Administration organization, he said:

"I am looking for brains, and I don't care what political label they wear, so long as a man is loyal and wants to help lick the Kaiser quickly. The supreme test in this country right now is to deliver the goods in every line of endeavor."

Compensation Contract Near Solution

In speaking of the compensation contract at New York, Mr. McAdoo said that the matter was near solution. He expressed the opinion that the delays in coming to terms about the standard contract were not due to the government and declared that the railroads would be justly treated at all times.

N. L. Amster, president of the Investors Protective Association, in an interview in Boston has also expressed his hope for an early settlement:

"The railroad rental contract has reached a point where it is likely to be presented to the individual carriers any day now. One of the two points on which there was the greatest contention was giving the Railroad Administration unrestricted power to deduct from rental money whatever sum in their opinion was necessary for property improvements, extensions or betterments. This has finally been adjusted so the roads will have power to superintend the spending of their own money.

"The other point on which there was apprehension was the 'acceptance clause' by which railroads were asked to give up any claims to damages for losses through diversion of business during federal control. The government could strip the railroads of business and good will. I have been advised that the matter will be adjusted with fairness to the roads.

"I feel the contract will be satisfactory and will protect both bond and shareholders."

Allocation of the 100,000 Standard Cars

The following table gives the allocation of the Railroad Administration's 100,000 standard freight cars as determined by the Division of Operation. It will be noticed that the cars are well distributed, only two roads, the Pennsylvania lines west and the Baltimore & Ohio, being allocated over 5,000 cars. The Pennsylvania lines east and the New York Central proper will each receive 4,500.

ALLOCATION OF 100,000 STANDARD FREIGHT CARS		
Railroad	No.	Type of car
Ann Arbor	300	Single sheath box
Atlanta, Birmingham & Atlantic	200	Single sheath box
Atlanta, Birmingham & Atlantic	150	Gondola—drop bottom
Atlantic Coast Line	500	Single sheath box
Atlantic Coast Line	750	Gondola—drop bottom
Atchison, Topeka & Santa Fe	1,700	Double sheath box
Atchison, Topeka & Santa Fe	1,000	Gondola—drop bottom
Bangor & Aroostook	300	Single sheath box
Big Four	1,000	Double sheath box
Big Four	1,000	Hopper
Bessemer & Lake Erie	500	Hopper
Boston & Maine	1,500	Single sheath box
Boston & Maine	1,000	Gondola—drop bottom
Baltimore & Ohio	2,000	Single sheath box
Baltimore & Ohio	500	Gondola—low side
Baltimore & Ohio	2,000	Hopper
Baltimore & Ohio	1,000	Gondola—drop bottom
Buffalo, Rochester & Pittsburgh	800	Hopper
Carolina, Clinchfield & Ohio	300	Single sheath box
Carolina, Clinchfield & Ohio	750	Hopper
Chicago & Alton	500	Gondola—drop bottom
Charleston & Western Carolina	300	Single sheath box
Chicago, Burlington & Quincy	1,500	Double sheath box
Chicago & Northwestern	2,250	Double sheath box
Chicago & Northwestern	1,000	Gondola—drop bottom
Chicago, Indianapolis & St. Louis	300	Double sheath box
Cincinnati, Indianapolis & Western	300	Gondola—drop bottom
Central of New Jersey	1,000	Single sheath box
Central of New Jersey	500	Gondola—low side
Central of New Jersey	500	Hopper
Chicago & Eastern Illinois	500	Double sheath box
Chicago & Eastern Illinois	500	Gondola—drop bottom

Chesapeake & Ohio.....	1,000	Single sheath box
Chesapeake & Ohio.....	2,000	Hopper
Colorado & Southern.....	300	Double sheath box
Chicago, Rock Island & Pacific.....	1,000	Double sheath box
Chicago, Rock Island & Pacific.....	1,000	Gondola—drop bottom
Chicago, St. Paul, Minn. & Omaha.....	500	Double sheath box
Chicago, St. Paul, Minn. & Omaha.....	200	Gondola—drop bottom
Delaware & Hudson.....	500	Single sheath box
Delaware & Hudson.....	1,000	Hopper
Delaware, Lackawanna & Western.....	500	Gondola—low side
Delaware, Lackawanna & Western.....	700	Hopper
Delaware, Lackawanna & Western.....	500	Gondola—drop bottom
Duluth, South Shore & Atlantic.....	200	Double sheath box
Detroit, Toledo & Ironton.....	300	Gondola—drop bottom
Elgin, Joliet & Eastern.....	500	Double sheath box
Erie.....	1,000	Single sheath box
Erie.....	700	Hopper
Erie.....	800	Gondola—drop bottom
El Paso & Southwestern.....	500	Double sheath box
El Paso & Southwestern.....	200	Gondola—drop bottom
Florida East Coast.....	500	Single sheath box
Georgia.....	300	Single sheath box
Georgia.....	100	Gondola—drop bottom
Great Northern.....	1,500	Double sheath box
Hocking Valley.....	500	Gondola—drop bottom
Illinois Central.....	2,000	Double sheath box
Kansas City Southern.....	300	Double sheath box
Long Island.....	500	Single sheath box
Louisville & Nashville.....	2,000	Hopper
Louisville & Nashville.....	2,000	Gondola—drop bottom
Lehigh Valley.....	1,000	Single sheath box
Lehigh Valley.....	500	Gondola—low side
Lehigh Valley.....	1,300	Hopper
Lehigh Valley.....	500	Gondola—drop bottom
Michigan Central.....	1,000	Single sheath box
Michigan Central.....	1,000	Gondola—drop bottom
Maine Central.....	500	Single sheath box
Minneapolis & St. Louis.....	300	Double sheath box
Missouri Pacific.....	1,500	Double sheath box
Missouri Pacific.....	1,000	Gondola—drop bottom
(Including St. L. I. M. & S.)		
Northern Pacific.....	1,000	Double sheath box
Norfolk & Western.....	800	Single sheath box
Nashville, Chattanooga & St. Louis.....	200	Gondola—drop bottom
Norfolk Southern.....	200	Single sheath box
Northwestern Pacific.....	100	Double sheath box
New York, Chicago & St. Louis.....	500	Double sheath box
New York Central.....	2,000	Single sheath box
New York Central.....	500	Gondola—low side
New York Central.....	1,000	Hopper
New York Central.....	1,000	Gondola—drop bottom
(Including L. S. & M S. and C. I. & S.)		
New York, New Haven & Hartford.....	1,500	Hopper
Pennsylvania.....	2,000	Single sheath box
Pennsylvania.....	500	Gondola—low side
Pennsylvania.....	2,000	Hopper
Pennsylvania Lines West.....	2,000	Single sheath box
Pennsylvania Lines West.....	1,000	Gondola—low side
Pennsylvania Lines West.....	2,500	Hopper
Pennsylvania Lines West.....	2,000	Gondola—drop bottom
(Including P. C. C. & St. L. and Vandalia.)		
Pere Marquette.....	500	Single sheath box
Pere Marquette.....	500	Gondola—drop bottom
Philadelphia & Reading.....	1,000	Single sheath box
Philadelphia & Reading.....	500	Gondola—low side
Philadelphia & Reading.....	2,000	Hopper
Pittsburgh & Lake Erie.....	500	Single sheath box
Pittsburgh & Lake Erie.....	500	Gondola—low side
Richmond, Fredericksburg & Potomac.....	500	Single sheath box
Seaboard Air Line.....	500	Single sheath box
Southern Railway.....	2,000	Single sheath box
(Including C. N. O. & T. P., A. G. S., N. O. & N. E., Harriman & N. E., Nor. Ala.)		
Southern Pacific.....	2,000	Double sheath box
Spokane, Portland & Seattle.....	300	Double sheath box
St. Louis-San Francisco.....	1,500	Double sheath box
St. Louis-San Francisco.....	1,000	Gondola—drop bottom
Toledo & Ohio Central.....	250	Double sheath box
Toledo & Ohio Central.....	1,000	Hopper
Texas & Pacific.....	500	Double sheath box
Toledo, St. Louis & Western.....	500	Double sheath box
Toledo, St. Louis & Western.....	750	Hopper
Union Pacific System.....	1,000	Double sheath box
(Includes O. S. L. and O. W. R. & N.)		
Wabash.....	1,500	Double sheath box
Wabash.....	1,000	Gondola—drop bottom
Wheeling & Lake Erie.....	1,000	Hopper
Western Maryland.....	300	Single sheath box
Total.....	100,000	

SUMMARY

Single sheath box.....	25,000
Double sheath box.....	25,000
Gondola—low side.....	5,000
Gondola—drop bottom.....	20,000
Hopper.....	25,000
	100,000

Fourth Liberty Loan Appeal

"We have the Kaiser groggy—let us keep hitting hard now until he is counted out," says Director General McAdoo in his appeal for Liberty Loan subscriptions by railway employees in the coming loan campaign. He says that he wants every railroad man to go the limit in lending his available

means to Uncle Sam. He suggests that they begin to save now, and says that no employee can make better use of the back pay recently awarded him than by putting it in Liberty Bonds.

The appeal is given in Circular No. 51, the distribution of which to employees was begun on Tuesday. This circular follows:

"In order to raise sufficient money to arm, equip and support our gallant soldiers and sailors, to finance our other war activities, and to extend necessary credits to our allies, to enable them to continue the war against the German military despotism, the Fourth Liberty Loan campaign will begin September 28, 1918. Every loyal American must invest in the securities of his government to the limit of his ability if America is to triumph in this war.

"Railroad men and women are doing a vital service for their country. They responded patriotically to the appeal of the government in the First, Second and Third Liberty Loan campaigns, and I hope that they have bought liberally of War Savings Stamps. They are also operating the railroads, which is war service of primary importance. I am sure that they count it a glorious privilege to do this vital work for their country. I deeply appreciate what they have already done, but there is more to do, and I am sure that they will do more if the way is pointed out to them.

"The enormous sums required to finance democracy's part in the war impose a new duty upon each and every one of us. Liberty Loans must be offered from time to time until the Kaiser is licked to a finish. Each of these loans must be subscribed in full. No patriotic American will have performed his duty by subscribing to one loan only, or by buying a few War Savings Stamps. Each and every one should practice every possible economy, save every possible dollar, and buy as many Liberty Bonds as he can afford every time a Liberty Loan is offered to the country.

"In the Fourth Liberty Loan campaign which is just ahead of us I wish to make a special appeal to every railroad employee to go the limit in lending of his available means to Uncle Sam. Now is the time to prepare for that campaign by saving every possible dollar, so that each may be ready to do his part before the subscription closes. Hundreds of thousands of employees in the railroad service of the United States have received, or will receive, checks for back pay, in accordance with the provisions of the Wage Order I approved May 25, 1918, and Supplement No. 4 to General Order 27, issued on July 25, 1918. No employee can make better use of his back pay than to lend it to the government at interest, thus securing an investment of absolute safety for himself and building up a reserve for a rainy day.

"You must remember that you are not asked to give your savings to the government; you are asked merely to lend your money to your government—and for what purpose? To back the millions of the finest American boys ever collected together in a great army, and to help them fight irresistibly for our lives, liberties, and vital interests. One and a half million of these splendid boys are already in France, and already they have given the Kaiser a dose from which he is staggering and from which he will not recover. But the pressure must be kept up. Arms, ammunition, and food supplies of all kinds must go forward in a continuous stream if the pressure is to be maintained. It depends upon us who stay at home to keep the pressure applied. We must lend our money to our government, lend it to the limit, so that the government may in turn put in the hands of our splendid sons the things without which they can not fight and without which the defeat of the Kaiser and his hateful military despotism can not be accomplished.

"I want the railroad men and women of the United States to do more, if possible, than anybody else, because I want them to be among the first always in patriotism, in service, and in sacrifice to our great and glorious country. We have

the Kaiser groggy—let us keep hitting hard now until he is counted out."

The Warranty in Purchasing Contracts

The Fuel Administration has followed the example of the war department in giving some idea of the methods it will adopt in following the interpretation of the contract covenant as given by the office of the attorney general. An effort has been made to get the Railroad Administration to do the same and the matter is now before John Skelton Williams, director of the division of finance and purchases, for his decision.

The Fuel Administration's announcement was in the form of its correspondence with the attorney general. Its letter to the attorney general was in the form of four questions, as follows:

"1. Where coal is purchased by a jobber from an operator at a price below the mine price fixed by the President or the United States Fuel Administrator, can such jobber sell such coal to the United States govern-

ment at the mine price so fixed? Of course, in the case of such a sale the jobber would be the 'contractor' and not the operator, and it would appear that the profit realized by the jobber might not be construed as compensation paid by the operator to the jobber for the procurement of the contract.

"2. Is the above provision intended to prevent an operator from employing a sales agent on sales of coal to the government where such sales agent receives as compensation for his services either a fixed price per ton or a percentage of the selling price? In the determination of this question it should be borne in mind that many coal operators do not maintain their own sales departments, but employ established distributors of coal to act as sales agents under term contracts, on which such sales agents undertake to sell the output or a given quantity of the operator's coal for a fixed or percentage compensation.

"3. Is the above covenant to be construed to prevent any agency of the government from employing a distributor of coal as purchasing agent and paying such agent the commission allowed by rule 2 of the rules and regulations in reference to licenses contained in publication No. 22, inclosed herewith?

"4. Are contracts between coal operators and railroads to be construed as government contracts so as to require the insertion therein of the covenant quoted above. In answering this question the fact should be considered that a very large percentage of coal purchased by railroads in the past has been purchased—(1) At the government price through jobbers, who in turn purchase from the operators below the government price. (2) At the government price from sales agents, who receive their compensation from the operators. (3) At the government price through purchasing agents employed by the railroad and paid by the railroad the purchasing agent's commission permitted by the above-mentioned rule 2."

ATTORNEY GENERAL'S RULINGS

The attorney general's ruling is contained in a letter dated August 19, which reads as follows:

"I have before me your letter of July 20 on the subject of the covenant against contingent fee operators which the President has directed to be inserted in all government contracts.

"You ask how far the requirement of the insertion of this covenant is to be observed in certain circumstances arising in the coal industry, and what its effect will be if so inserted.

"I have no hesitation in saying that the circumstances set forth in your

first, third, and fourth paragraphs are within neither the letter nor the spirit of the covenant.

"In the second paragraph you ask: 'Is the above provision intended to prevent an operator from employing a sales agent on sales of coal to the government where such sales agent receives as compensation for his service either a fixed price per ton or a percentage of the selling price?'

NOT RELATED TO SITUATION

"The letter of the covenant and the President's request is broad enough unquestionably to include such a situation, but it is clear, when the attendant circumstances are considered, that the situation is not within the spirit either of the President's order or of the covenant. Rules and regulations have been promulgated relative to licenses for the distribution of coal and coke by which the compensation to be paid to sales agents is rigidly controlled. Manifestly, it was not the intention of the President in requesting the insertion of this covenant to modify the policy or affect these rules and regulations. The situation in the coal industry is, therefore, outside the mischief which the covenant was intended to cure, and unquestionably outside the President's intent.

"It is my opinion, therefore, that the covenant has no relation to any of the situations set forth in your letter."

New Importance of Conductor's Train Report

The regulations governing the reporting of operating statistics, as given in Circular No. 15, which was effective August



Robert Rice
Federal General Manager, Colorado
& Southern



G. F. Hawks
Federal General Manager, El Paso &
Southwestern



J. P. O'Brien
Federal Manager, Oregon-Washington
Railroad & Navigation Company

1, instruct that the conductor's train report shall be the source of the basic information for train miles, locomotive miles, car miles, gross ton miles, rating ton miles, net ton miles and train hours. To insure the accuracy of the conductor's report, the regional directors, acting on instructions from the Division of Operation, have sent the following communication to all federal and general managers:

Referring to Circular No. 15, making effective the new forms for report ing operating statistics.

Attention is directed to the fact that the conductor's train report is to be the source of the greater part of the basic information, and that the accuracy of that information and of the averages or ratios derived therefrom will depend in a large measure on the accuracy of the wheel reports. It is advisable therefore, to bring this subject to the attention of the federal and general managers, and to ask them to instruct division superintendents to see that all conductors understand that hereafter their wheel reports are to be relied upon to a much greater extent than ever before as the basis for important statistics, and that they must make every effort to have the reports as correct as possible.

Now that each car load shipment is accompanied by a waybill, the principal reason for inaccuracies in the tonnage figures on the wheel report is removed. Circular No. 15, paragraph 9, provides that the weight of cars containing less than carload freight may be reported as an arbitrary tonnage, such arbitrary to be specified by proper authority and to be based on the experience of the carrier (as to average load in such cars). In such cases the conductor should report as the gross tons the stencilled tare weight of the car plus the arbitrary tons for contents.

The circular provides further that when carload freight is billed at estimated weights, conductors will report such estimated weights as the net tonnage.

As stated in Circular No. 15, the form of wheel report in use on individual roads, if it does not now provide for the complete data, should be amended to conform to the new requirements. In such cases, it may not be possible to obtain the complete figures for August, but the reports on the O. S. forms, in so far as it is possible to furnish the figures, should be rendered for that month. There should be no difficulty in making the September report complete.

Division superintendents should be required not only to see that clear

instructions are issued to conductors (as to their wheel reports) and to billing clerks (as to showing complete data on the waybills) but also to see that such instructions are observed. This may be accomplished only by a system of checking the wheel reports periodically so as to detect and correct carelessness or misunderstanding.

Tourist Fares to California

Announcement was made by the Railroad Administration last Friday that tourist fares to California, tickets on sale all the year with nine months' limit as heretofore, will be 90 per cent of double the one-way fares bearing the same percentage relation to the present one-way fares as the former round-trip fares bore to the old one-way fares. The fares from the Missouri river will be \$5.40 higher than they were formerly; from Chicago \$9.81 higher; from New York \$17.55 higher. Winter tourist fares to Florida and Southern points will be made on the same basis as to California, namely, 90 per cent of double the one-way fares, and the new fares will bear about the same average ratio to the present advanced fares as the old winter fares bore to the old one-way fares. Tickets will be sold from October 1 to April 30, both inclusive, with return limit June 1, stop-overs to be allowed on going or return trip within final limit as heretofore.

New Feeder Cattle Rates from Texas

The director general announced last Friday that representatives of the livestock interests of the Southwest have been advised that he will at once instruct that rates be published on feeder cattle from Texas to all points east, including Kentucky and Virginia. These rates will be on the basis fixed by the Interstate Commerce Commission in the Shreveport case, plus the advances required by General Order No. 28, the rates for feeder cattle being 75 per cent of the beef cattle rates. There have not been heretofore any through rates on cattle from Texas to the Southeastern territory, and these rates are to be published because of the emergency existing in the Southwest under drouth conditions, which made necessary the movement of stock out of that territory to points where feed can be found.

Grain Transportation Permits Must Be Approved by Inland Traffic Manager

The Railroad Administration and the Exports Control Committee have decided, in order better to control the port situation and thereby prevent congestion and to secure maximum transportation results, to concentrate the approval of transportation permits, covering all export grain and grain products, through one channel, and to that end, it has been arranged that, effective at once, the issue of these permits shall hereafter be subject to the approval of C. E. Spens, manager of inland traffic for the Food Administration, and who also is a representative of the Railroad Administration. The permits will be issued directly as heretofore, by the freight traffic committee, but only when approved as mentioned.

At present this arrangement will only include North Atlantic ports, where heretofore the permit system has obtained. It is the intention, however, also to inaugurate the permit system in the immediate future at all Gulf Ports, when the issue of permits will be subject to the same approval as at North Atlantic ports.

Mr. Spens has opened an office at 42 Broadway, New York, with C. A. Lahey, assistant manager of inland traffic, of the United States Food Administration, directly in charge of the new work.

7,173 Troop Trains

The railroads of the United States from May 1 to June 30, 1918, operated 7,173 special troop trains, using a total of 95,246 cars. In this same period the railroads handled a total of 5,377,468 soldiers, including the men handled on

special trains, on regular trains and drafted men. These figures were given out by the Railroad Administration on August 22 in the following table:

	TROOP MOVEMENTS		Jan. 1, 1918, to June 30, 1918	Total
	May 1, 1917, to Dec. 31, 1917			
Special trains operated.....	2,850	4,323	7,173	
Grand total cars used.....	39,349	55,897	95,246	
Averages:				
Cars per train.....	13.8	12.9	13.3	
Hours per train.....	49	47	47.8	
Miles run per train.....	942	934	937	
Miles per hour.....	19.1	20.0	19.3	
Passengers per train.....	353	439	405	
Persons handled:				
On special trains.....	1,007,174	1,895,476	2,902,099	
On regular trains.....	708,674	371,181	1,079,855	
Drafted men.....	502,584	892,930	1,395,514	
Total.....	2,218,432	3,169,587	5,377,468	

63,000 More Cars of Grain

In last week's issue, page 342, appeared a table showing that the railroads under federal control in the five weeks ending August 3 had handled 44,000 more cars of grain this year than last. Additional figures for the weeks ending August 10 and 17 now bring the total number of cars of grain loaded to 197,428, for July and the first half of August this year, as compared with 134,604 in the same seven weeks of last year. As will be seen from the table, however, the biggest week so far has been that ending August 3, the two succeeding weeks having shown decreases from the totals established that week.

Week ending	Eastern District		Allegheny District		Pocahontas District		Southern District	
	1917	1918	1917	1918	1917	1918	1917	1918
July 6.....	3,311	2,869	234	202	16	24	1,395	1,313
July 13.....	4,717	3,547	353	273	24	99	569	960
July 20.....	3,605	5,547	293	440	38	141	566	1,191
July 27.....	3,320	6,289	358	518	56	125	588	1,212
Aug. 3.....	4,117	8,536	560	900	97	168	416	666
Aug. 10.....	5,245	8,340	546	769	135	144	445	534
Aug. 17.....	6,294	7,899	441	515	114	113	677	820
Total.....	30,609	43,029	2,785	3,617	480	814	4,656	6,716

Week ending	Northwest District		Central West District		Southwest District		Total	
	1917	1918	1917	1918	1917	1918	1917	1918
July 6.....	3,680	2,432	4,466	4,255	1,360	2,744	14,662	13,839
July 13.....	4,743	3,210	5,085	7,700	3,088	5,950	18,579	21,739
July 20.....	4,022	3,839	5,169	10,632	3,422	6,677	17,115	28,467
July 27.....	4,210	3,777	5,895	13,195	3,800	7,147	18,227	32,263
Aug. 3.....	3,292	4,716	7,383	14,097	3,543	6,549	19,410	35,634
Aug. 10.....	3,678	5,614	8,379	12,373	3,292	5,115	21,720	32,909
Aug. 17.....	5,781	7,628	8,946	10,606	2,638	4,996	24,891	32,577
Total.....	29,606	31,216	45,323	72,858	21,145	39,178	134,604	197,428

Fidelity Bonds

The regional directors are sending out to federal managers in their jurisdictions questionnaires asking for information with regard to fidelity bonds, the cost thereof, the method of handling, etc., for the three years 1915, 1916 and 1917. The reason for sending out these questionnaires is explained by the following paragraph, which is taken from the instructions issued by one of the regional directors: "In view of the director general's Order No. 24, instructing lines not to renew any expiring insurances 'except bonds and policies insuring fidelity of employees in handling funds, but that such bonds and policies shall be continued', please direct all lines not to renew, for a longer period than one year, any such bonds or policies or contracts therefor, that might terminate, as with a further consideration of this subject it may be desirable to change the method or practice with regard thereto."

Fuel Conservation

The manager of the fuel conservation section has addressed to regional directors a communication relative to the fuel losses caused by hostlers not handling to the best advantage the movements of engines to and from the passenger stations. In this letter he said:

"My attention has been directed to the fact that a great

many terminal locomotives are delivered to the crews at the passenger stations by hostlers; in a similar manner the crew on arrival abandon the engines in the passenger stations, hostlers moving same to roundhouse.

"In many instances the engines are fired up so as to conform to the schedule established by the hostler and his helper, enabling him perhaps to move all passenger engines during a certain pre-determined period. In a similar manner engines are allowed to stand at passenger stations, in some instances for several hours, waiting for the hostler to remove same to the roundhouse, this situation representing a very material fuel loss.

"Will you ask the several federal managers to make a canvas of this situation, attempting to organize the stand-by time of passenger locomotives moved by hostlers from and to passenger stations to the end that such be reduced as much as possible."

Headlights for Switching Engines

At the meeting of the Committee on Standards for Locomotives and Cars which was held in Washington last week the question of suitable headlights for switching locomotives was discussed and it was unanimously agreed by members present that electric headlights are more efficient and economical than any other type of headlight. The regional directors have, therefore, been advised to express to their federal managers the desire that when necessary to make changes in headlights on switching engines to meet the requirements of the law or on account of renewals they be equipped with a headlight of the incandescent type with a turbo-generator and the bulb of suitable wattage.

Car Service Circular

Circular C. S. No. 27, issued by the Car Service Section on August 19 ordered that effective immediately and until further notice, all open top cars of St. Louis & San Francisco ownership made empty in the Southern region must be returned empty to lines of the St. Louis & San Francisco east of the Mississippi via short route.

Light Loading of Foodstuffs

The Car Service Section in Bulletin No. 41 emphasizes the urgent necessity for reporting all violations of Rule No. 9 of the United States Food Administration relating to the minimum loading of foodstuffs shipped in carload lots. The bulletin bears the title "Stop Light Loading of Foodstuffs," and two of its three pages quote Rule No. 9 as revised and give in detail the minimum carload weights required by the rule. It then says:

"1. United States Food Administration Rule 9, only applies to shipments moving as carloads, and on carload rates.

"2. Comparatively few railroads are reporting to this section violations of Rule 9, indicating that the matter is not being given proper attention.

"3. Commencing at once, in order to avoid duplication, these reports must be made by railroads originating shipment. Agents at points of origin will make necessary inspection of the loading of commodities on which trade units are established to determine to what extent cubical capacity of equipment is utilized.

"4. At large stations where agents cannot inspect the loading, some arrangements should be made to have either a personal representative or an inspector of weighing and inspection bureau make weekly check for violations.

"5. Agents at point of origin will require shippers to show on bill of lading reasons for not complying with Rule 9. A report must immediately be made to his superior officer, who will report promptly to car service section for handling with the Food Administration. No other investigation will be conducted by any railroad officer or committee.

"6. Rule 9 should be reissued as revised and all agents made familiar with its provisions.

"7. All reports sent to this office should be in duplicate with a separate sheet for each commodity."

Capital Expenditures

R. S. Lovett, director of the division of capital expenditures, on August 23 issued two circulars relating to the reporting of expenditures for capital account. In supplement 3 to D. C. E. circular No. 7, he said:

D.C.E. Circular No. 7, dated May 27, 1918, dealing with expenditures chargeable to capital account in excess of the amounts specifically authorized is hereby amended by the addition of the following paragraph:

FIFTH: Such requests should bear the same serial number as the original D.C.E. Form 3 or 4 to which should be added a suffix number commencing with One. For example: If the original request was numbered 25, the request covering the excess expenditure should be Number 25-1, and in the event a second request is submitted it should be Number 25-2.

In all cases where the work was authorized or commenced prior to January 1, 1918, and an unexpended balance was reported on D.C.E. Form 1, the next serial number should be assigned to the request submitted to cover any excess expenditure made in connection therewith.

In D. C. E. circular No. 11 he said:

I observe many requisitions on D.C.E. Forms 3 and 4 for capital expenditures without approval by the personal signature of either the federal manager or the regional director. All such requisitions for capital expenditures in excess of \$5,000 must be approved by the personal signature of either the federal manager or the regional director. When thus approved by the federal manager, the regional director's approval may be evidenced by his signature executed by his agent, except in cases involving capital expenditures in excess of \$25,000, in all of which cases his personal signature will be required.

Weekly Report on Coal Loading

The weekly report to the director general by the Car Service Section for the week ending August 10 shows a total of 256,534 cars loaded during that week. This is considerably more than were loaded in the same week last year but less than during the week ended August 3 which itself showed a decrease from the week ended July 27. A summary of the figures follows:

	1918	1917
Total cars bituminous.....	213,618	182,259
Total cars anthracite.....	39,280	41,462
Total cars lignite.....	3,636	2,859
Grand total cars all coal.....	256,534	226,580

A summary of reports for the week ended August 17, 1918, based on actual reports from most roads, but with the results on some roads, estimated, follows:

	1918	1917
Total cars bituminous.....	207,753	175,768
Total cars anthracite.....	36,857	37,943
Total cars lignite.....	3,406	2,996
Grand total cars all coal.....	248,016	216,707
Increase of 1918 up to and including week ended August 17 over same period of 1917, 452,573 cars.		

Bureau for Suggestions and Complaints

Director General McAdoo wants the public to help him secure as satisfactory and efficient passenger service as possible under war time conditions. To this end he will soon issue a request to the traveling public to send him any criticisms or suggestions and has established a Bureau of Suggestions and Complaints at Washington to handle them.

This bureau has been placed in charge of Theodore H. Price, actuary to the Railroad Administration. Mr. Price will be assisted by Ballard Dunn, a newspaper man of Chicago, and until recently publicity representative of the Union Pacific in that city, who has been given the title of assistant actuary.

The duties of the new bureau are announced in the following notice, which, as noted in Circular No. 50, will be displayed permanently in all stations and passenger coaches on the Federally operated railroads and which, when practicable, shall also be displayed on all time-tables, dining car menus and other printed matter prepared for public distribution.

I desire your assistance and cooperation in making the railroad service while under federal control in the highest possible degree satisfactory and efficient.

Of course, the paramount necessities of the war must have first consideration.

Our gallant sons who are fighting in France and on the high seas cannot be adequately supported unless the railroads supply sufficient transportation for the movement of troops and war materials and to keep the war industries of the Nation going without interruption.

The next purpose is to serve the public convenience, comfort, and necessity to the fullest extent not incompatible with the paramount demands of the war.

In order to accomplish this, criticisms and suggestions from the public will be extremely helpful, whether they relate to the service rendered by employees and officials or impersonal details that may convenience or inconvenience patrons of the railroads. It is impossible for even the most vigilant management to keep constantly in touch with local conditions and correct them when they are not as they should be, unless the public will cooperate in pointing out deficiencies and disservice when they exist, so that the proper remedies may be applied.

I have, therefore, established a BUREAU FOR SUGGESTIONS AND COMPLAINTS in the director general's office at Washington, to which the public is invited to resort.

Aside from letters of complaint and suggestion, the public can render a genuine service by sending letters of commendation of employees who are conspicuously courteous and efficient in the performance of their duties. Nothing promotes the esprit of a great organization more than recognition from time to time of those employees who perform their duties faithfully and commendably.

It is requested that all communications be brief and explicit and that the name and address of the writer be distinctly written.

Also give the time of day or night, the number of the train, the name of the railroad, and, if possible, the name of the employee whose conduct is complained of or whose services are commended, together with such other information as will enable me to take appropriate action.

Please address W. G. McADOO, Director General of Railroads, Bureau for Suggestions and Complaints, Washington, D. C.

Freight Claim Section

The director general has announced in circular No. 48 the establishment of a freight claim section of the division of law with jurisdiction over all matters pertaining to claims for loss and damage and their prevention. John H. Howard, formerly general claim agent of the Chicago & Alton, has been appointed manager of the new section with offices in the Southern Railway Building, Washington.

In Circular No. 49, dated August 22, the announcement was also made that effective August 1 the handling of loss and damage freight claims and the prevention of causes of such claims was placed in charge of freight claim agents, reporting to the head of the legal department of each railroad. Claims for personal injury and damage to property, other than freight, will be handled by the legal department. Overcharge and relief claims will be handled by the accounting department.

Railroad Employees and the Draft

Posters placarded at every one of the 56,000 railroad stations of the country will be one of the many means taken by Provost Marshal General Crowder to insure 100 per cent publicity and 100 per cent registration under the man-power bill about to be passed by Congress. These posters, made up in the form of four-page newspapers will also go into all post offices and factories. On the first page will be messages from President Wilson, the Secretary of War, the Secretary of the Navy and other high officials calling on the nation to respond. On the back page will be detailed instructions for the guidance of registrants. Across the two inside pages will be spread the poster announcement of the registration date and the ages affected.

The use of posters is, however, only a small part of the entire campaign. Newspapers, trade papers, hand bills, street car cards, and personal appeals through clergymen, four-minute men, etc., will all be used. In fact, the campaign that has been marked out will probably be the most intensive ever undertaken by the government, considering the time within which it must be carried through. It is the intention of the provost marshal general's office, in order to meet the pressing demands of the man-power program, not to let more than 10 days elapse, if possible, between the signing of the bill and registration day.

The Railroad Administration has already taken steps to

notify railway employees concerning the necessity of applying for deferred classification. As noted in the *Railway Age* of last week, the provost marshal general has sent a message to all draft officials requesting reconsideration of the classification of railway men at present in Class I with a view to leaving in railway service those skilled men whose withdrawal would handicap efficient transportation. The Central Western regional director last week emphasized the necessity for filing claims for deferred classification for such men, in a wire to his federal managers, reading as follows:

"You are authorized to indicate to men in your employ that the director general wishes those entitled to deferred classification to apply for it because of the valuable service they can render the government by continuing in railroad service. Please also understand that where an individual does not wish to make application or where it is impracticable for him to do so, application may be made by the federal manager or representative of the United States Railroad Administration and I understand draft officials have been so advised by General Crowder."

Railroads Largest Users of Steel

That the largest of the government steel requirements is that of the railroads was the conclusion of a meeting of the War Industries Board last Thursday, called to consider means for securing the maximum use of steel for wartime purposes. The meeting was presided over by Bernard M. Baruch, chairman, and was attended by the fuel administrator, a representative of the Department of Labor, a number of other government officers, the War Service Committee of the United States Steel Institute and a number of steel manufacturers. Carl Gray, director of the division of operation, represented the Railroad Administration. The full question of the government steel requirements was taken under review with a view to meeting every ounce of the demand, if that is possible. It was determined that the steel requirements for the government were in the following order: First, the railroads; second, shipbuilders; third, the War Department, and fourth, the Navy. The question of supplying these demands in such fashion that there need be no curtailment of the actual war requirement for steel was put squarely before the manufacturers and all others concerned in any way with steel production.

To accomplish this it was decided that there must be: First, greater conversion of mills to the production of steel that is required in the war program.

Second, an increase in the coal supply, particularly by-products coal, available for mills engaged in government work.

Third, shutting off further steel shipments to industries other than those engaged in meeting war needs.

Fourth, more rigorous conservation in the handling of steel in the mills.

The steel men in the meeting promised to co-operate to their utmost in meeting the government's steel requirements and virtually pledged themselves to so increase their output as to guarantee the needs of the war program.

Books to Be Audited Every Six Months

The director of the division of public service and accounting on August 15 issued P. S. & A. Circular No. 23, calling for an audit of the accounts of federal treasurers and paymasters once in every six months. The circular follows:

The accounts of federal treasurers and paymasters, charged with the responsibility of handling moneys, shall be audited at least once every six months during federal control. The first audit of those accounts shall take place within three months of the date hereof (August 15).

The audit of such accounts shall be under the direction of the chief accounting officer of the carrier or such of his assistants as he may delegate to conduct the work.

The cash balance on deposit at the various depositories shall be verified by appropriate forms of certificates of balances obtained from each de-

pository, and the federal treasurer's cash balance with each depository shall be reconciled therewith.

The original report of such audits shall be retained in the appropriate files of the accounting department. A copy of such report shall be submitted to the federal manager and to the undersigned, which shall include a statement of the amounts on deposit and the names of the depositories in which the funds are held.

Shortages, other than those of a petty nature, or any other unusual condition in the federal treasurer's cash accounts or records, disclosed by the audit, shall be promptly reported by telegram to J. S. Williams, director of finance, Washington, D. C., and a copy thereof forwarded by mail to the undersigned.

Any complete audit of the Federal treasurer's cash account conducted under the jurisdiction of the chief accounting officer of the carrier in connection with the opening of the new accounts prescribed in General Order No. 37, may be accepted as a compliance with this circular for the first audit of the year ending December 31, 1918, provided that a copy of the report of the audit is filed with the undersigned and the accounts are again audited before the close of the year.

Bonds for "Order" Shipments

In response to inquiries concerning P. S. & A. Circular No. 20, the following information has been given in P. S. & A. Circular No. 24, by the division of public service and accounting, concerning bonds required to protect railroad interests when "order" shipments are delivered without the surrender of bills of lading.

1. Bonds in amount twice the amount of the invoice must be executed when single shipments are delivered. The bond must be prepared in the name of the consignee as principal, with individual or corporate surety. The principal cannot act as his own surety.

2. Blanket bonds in satisfactory amounts, by which is meant bonds continuing in effect, for amounts in excess of the aggregate value of all shipments to be released, may, when conditions require it, be accepted from the consignee. These bonds are restricted to shipments arriving at one station on one railroad, except that when a number of terminal stations are under the jurisdiction of one agent in such a way that proper supervision may be exercised over delivery of shipments, the bond may cover all such stations. When shipments approaching in value the amount of the bond have been delivered, additional security shall be required.

3. Blanket bonds, as described in paragraph 2, may be executed by shippers, under the terms of which carriers will accept written or telegraphic orders to deliver "order" shipments. When such bonds are arranged, initial carriers will notify all interested lines, and show reference to such bonds on each waybill.

4. When "order notify" cars are diverted in transit, and the consignee becomes the shipper, the provisions of the circular relating to the shipper and the initial carrier shall apply to the giver of the reconsigning order and the carrier to which such order is given.

5. The fourth paragraph of P. S. & A. Circular No. 20 has been modified to read as follows:

Shipments consigned to shipper on "straight bill of lading—original—not negotiable"—shall be delivered only upon surrender of consignor's written or telegraphic order for such freight to the agent of the delivering carrier and the payment of freight and other charges.

The requirement that bond shall be filed is eliminated.

6. Under proper conditions "Order notify" shipments may be placed in warehouses operated by responsible companies, without bonds, subject to release by the railroad agent, when bill of lading has been surrendered.

7. A form of bond for use of shippers was attached to P. S. & A. Circular No. 20. With slight modifications, this bond may be used by consignees, or the forms heretofore in use on individual railroads, with necessary changes indicating W. G. McAdoo, director general of railroads, to be the obligee, may be made available.

8. All bonds must be satisfactory to the federal treasurer of the carrier, and the provision, "individual or corporate," applies with equal force to all. It is not expected that federal treasurers will personally act upon each bond, but that agents or others will be authorized to act for them within certain limits, and under specific instructions.

Definition of Delivery of Freight

To allay any misunderstanding with respect to what constitutes delivery of freight at destination, as provided for by General Order No. 25, and for the purpose of defining when transportation charges are due, the following rules have been promulgated by the division of public service and accounting and issued in P. S. & A. Circular No. 25 on August 15:

1. The lien on property transported should not be released if there is doubt as to the willingness or ability of the consignee to promptly pay the transportation charges. In such cases the present practice should be continued and payment of freight charges exacted before placement of cars on private siding, before delivery of cars to terminal switching carrier or before seals are broken after placement on public team tracks. If commodities are transported in open cars, freight charges should be collected before cars are unloaded, and if considered necessary, before placement on team tracks.

2. Cars consigned to bonded customers or to regular responsible customers are to be considered as delivered when placed upon industrial sidings or team tracks, either those connecting directly with the road haul carrier or those located on terminal switching lines.

3. Cars will be considered to be delivered when placed on interchange tracks with industrial railroads.

4. Under the provisions of paragraphs 2 and 3, cars will also be con-

sidered as delivered when constructively placed, as provided by demurrage rules.

Transfer of Balances to Federal Accounts

"Examination of the returns made by accounting officers in response to P. S. & A. Circular No. 18, dated July 15, 1918," says the director of the Division of Public Service and accounting in P. S. & A. Circular No. 26, "indicates that some of them have misconstrued the provisions of General Order No. 17, rules and regulations which shall govern the recording of and accounting for all transactions arising under federal control, and have carried from the corporate books to the federal books balances in accounts as of December 31, 1917, other than those authorized in the general order.

The authorized accounts are:

"Cash,"

"Demand loans and deposits,"

"Time drafts and deposits," covered by paragraph 2 of the order;

"Net balances receivable from agents and conductors," covered by paragraph 3; and

Moving pictures of labor saving devices in track work.

Although paragraph 8 of the order specifically instructs that no assets and liabilities other than those above referred to, and such others as may be authorized in accordance with paragraph 5 of the order, shall be transferred to the federal books, some of the trial balances received indicate that accounting officers have carried to the federal books road and equipment accounts, suspense or clearing accounts, and other deferred debit and credit items appearing on the corporate books as of December 31, 1917.

Chief accounting officers should immediately have examined the journal entries made on the federal books which involve the transfer of balances of December 31, 1917, for the purpose of ascertaining whether they have strictly complied with the requirements of General Order No. 17 and bulletins interpretative thereof. In the event that their books disclose amounts representing balances as of December 31, 1917, the transfer of which was not authorized, they should immediately make the necessary entries in their accounts expunging such unauthorized items from the federal books.

Should any difficulty be encountered in disposing of items arising out of operations subsequent to December 31, 1917, affecting accounts not transferred, application for the procedure to be observed in disposing of such items should be made to the undersigned.

Output of Locomotive Builders to Be Increased

The War Industries Board announces that at a recent conference between representatives of the board, representative locomotive builders' officers of the Railroad Administration, and officials of some of the government departments, plans were worked out whereby the output of the locomotive shops of the country will be increased to 6,000 engines a year. The conference also formulated plans for the equitable distribution of the locomotive output to meet the military needs and the needs of the Railroad Administration. The conference was attended by Bernard N. Baruch, chairman, and other members of the board; S. M. Vaclain, Andrew Fletcher, C. K. Lassiter, Walker D. Hines, assistant director of railroads; Colonels Tyler and Wright of the army engineer corps; C. R. Gray, director of operation, United States Railroad Administration; J. R. Flannery, director of railroad equipment for the War Industries Board, and Henry Rea of the Committee on Munitions and Plants.

The increases in capacity discussed at the meeting will be taken care of by the builders, who will be financed by War Finance Corporation. The 6,000 locomotives mentioned will be divided about half and half, Pershing and Railroad Administration giving Pershing practically his full requirements, leaving some for other foreign governments and giving Railroad Administration its minimum necessary requirements.

The Roadmasters' Convention

THE THIRTY-SIXTH ANNUAL CONVENTION of the Roadmasters and Maintenance of Way Association will be held at the Auditorium Hotel, Chicago, on September 17 to 19. The program is being prepared with special reference to the problems of this year. The attention of the United States Railroad Administration has been called to this convention and R. H. Aishton, regional director of the Northwestern region, in whose area the meeting will be

held, has recommended to the director of the Division of Operation at Washington that all regional directors be urged to arrange for a full representation of their roadmasters at this meeting. The program is as follows:

FIRST DAY—MATERIAL DAY

Opening exercises.
Report of Committee on the Reclamation of Track Materials; G. B. Oatman, chairman.
Paper—"Common Defects in Rails and Means of Detecting Them in Track," by Charles W. Gennett, Jr., Mgr. Rail Inspection Department, R. W. Hunt & Co., Chicago.
Report of Committee on Fences, Cattle Guards and Farm Crossings; Chas. Newberg, chairman.
Moving pictures of labor saving devices in track work.

SECOND DAY—LABOR DAY

Round Table Discussion of Labor Conditions.
Address—"What the government is trying to do for the railway track labor situation," by M. G. Kibbe, in charge of the railway division, United States Employment Service, Chicago.
Report of Committee on Labor Saving Devices.
Paper—"Methods of Purchasing and Inspecting Ties and the Outlook for an Adequate Tie Supply," by John Foley, forester, Pennsylvania Railroad and associate manager of the Forests Products Section, Central Advisory Purchasing Committee, United States Railroad Administration.
Paper—Rail Situation.
Report of Committee on Fences, Cattle Guards and Farm Crossings.

THIRD DAY

Committee Report—Best Methods of Raising Track.
Business Session—Election of Officers, etc.

The Track Supply Association is completing its arrangements for an exhibit in rooms adjoining the convention hall. Forty-five firms have already made arrangements for exhibits and the display will be one of the largest and most practical which has been presented at any convention. The following firms have already made arrangements to exhibit:

EXHIBITING MEMBERS

Air Reduction Sales Company, New York.
American Hoist & Derrick Company, St. Paul, Minn.
American Steel & Wire Company, Chicago.
American Valve & Meter Company, Cincinnati, O.
Anchor Company, New York.
Barrett Company, New York.
Bethlehem Steel Company, Bethlehem, Pa.
Carbic Manufacturing Company, Duluth, Minn.
Chicago Malleable Castings Company, Chicago.
Crerar Adams & Co., Chicago.
Duff Manufacturing Company, Pittsburgh, Pa.
Fairbanks, Morse & Co., Chicago.
Fairmont Gas Engine & Railway Motor Car Company, Fairmont, Minn.
Frictionless Rail Company, Boston, Mass.
Hayes Track Appliance Company, Richmond, Ind.
Hauck Manufacturing Company, New York.
Ingersoll-Rand Company, New York.
Kalamazoo Railway Supply Company, Kalamazoo, Mich.
Lackawanna Steel Company, Buffalo, N. Y.
Luther Grinder Manufacturing Company, Milwaukee, Wis.
Madden Company, The, Chicago.
Milburn Company, Alexander, Baltimore, Md.
Mudge & Co., Chicago.
National Lock Washer Company, Chicago.
National Malleable Castings Company, Cleveland, O.
National War Savings Committee.
P. & M. Company, Chicago.
Pocket List of Railroad Officials, New York.
Positive Rail Anchor Company, Marion, Ind.
Q. & C. Company, New York.
Rail Joint Company, New York.
Railroad Supply Company, Chicago.
Railway Review, Chicago.
Reading Specialties Company, Reading, Pa.
Ramapo Iron Works, Hillburn, N. Y.
Sellers Manufacturing Company, Chicago.
Simmons Boardman Publishing Company, Chicago.
Southern Ry. Supply & Equipment Company, St. Louis, Mo.
Templeton, Kenly Company, Chicago.
Track Specialties Company, New York.
Union Switch & Signal Company, Swissvale, Pa.
Verona Tool Works, Pittsburgh, Pa.
Wharton, Jr., & Co., Inc., Wm., Easton, Pa.
Wyoming Shovel Works, Wyoming, Pa.

NON-EXHIBITING MEMBERS

Ajax Forge Company, Chicago.
Brown, M. H., New York.
Carnegie Steel Company, Pittsburgh, Pa.
Cleveland Frog & Crossing Company, Cleveland, O.
Creepcheck Company, The, New York.
Elliott Frog & Switch Company, East St. Louis, Ill.
Balkwill Manganese Crossing Company, Cleveland, O.

Monon Issues Routing Tariff to Save Car Mileage

THE RAILROAD ADMINISTRATION has given the question of routing traffic considerable attention this year, but the first railroad to issue a tariff showing specifically the most economical routes between stations on its line—which in many cases are via other roads in whole or in part—is the Chicago, Indianapolis & Louisville. C. I. & L. Routing Tariff No. 7757, is entitled "Instructions Governing Short-Line Routing of Freight Traffic between C. I. & L. Ry. Stations on Main Line and Branches (South of Monon, Ind.), and C. I. & L. Stations on the Indianapolis Division (Guernsey, Ind., to Indianapolis, Ind., inclusive). In a foreword, A. C. Tummy, general freight agent, states that agents of the road, in the discharge of their daily railroad duties, can serve their country in no more effective way than by a careful observance of the instructions contained in the tariff.

The possibilities of saving car mileage through the application of the short routing principle by Monon agents becomes apparent when one looks at a map of the railroad. The main line, south of Monon, Ind., to Louisville, Ky., and the Indianapolis division, from Monon to Indianapolis, form two sides of a triangle with Monon as the northern apex. The intention of the routing instructions, with certain exceptions indicated in the tariff, is that all traffic from the main line and branches (south of Monon) to the Indianapolis division shall move over connecting east-and-west lines rather than around via Monon. To do this means to save car miles and that, in turn, means conservation of equipment, power and labor. It is proposed to apply the short routing principle not only to local Monon traffic moving between divisions, but to through traffic moving from and over the Monon to connecting carriers.

The tariff contains a list of all stations on the Chicago, Indianapolis & Louisville with numbers assigned to each. In a table, the routes to be taken between each station on the Indianapolis division and stations on other parts of the line, which are designated by their numbers and grouped together when common routing applies, are indicated by letters ranging from "A" to "L." The significance of these letters is shown elsewhere in the tariff in a routing chart which sets forth the routes to be used for both c. 1. and 1. c. 1. traffic. To illustrate, stations 84 to 97, inclusive, take route "C" to Deer Creek, Ind., on the Indianapolis division. Reference to the routing chart shows that route "C" requires the movement of c. 1. freight via the C. I. & L. to Linden, Ind., thence via the Toledo, St. Louis & Western to Frankfort, and over the Monon again from Frankfort to destination. The routes designated on the chart are also subject to exceptions which are explained in detail.

The tariff is intended to make routing as simple as possible for the Monon agent, and to relieve him of the necessity of working out a short route for every shipment that he handles. Any saving effected as a result of the routing instructions will be of value to the American railway system and the country in its time of trial. A saving of only 10 car miles per day by each agent—an economy which seems easily attainable—would mean a very considerable saving by the road as a whole and a very substantial addition to the rolling stock and man-power of the transportation system of the nation.

AIR MAIL FROM PARIS TO ST. NAZAIRE.—The first experiment with an airplane postal service between Paris and St. Nazaire, on the coast, was made on August 17, the start from Paris being witnessed by the Minister of Posts. The airplane left from the suburb of Le Bourget.

Orders of Regional Directors

UNNECESSARY BURNING OF LIGHTS IN CARS.—The eastern regional director calls attention to the fact that lights are burned unnecessarily in cars while waiting in storage yards and terminals; this exhausts the batteries and involves expense. Too much light is used in some of the cars throughout the night.

Private Cars of Individual Ownership.—The eastern regional director asks for information concerning the number of private cars of individual ownership cared for or stored which, under present circumstances, cannot be used, and which might be purchased at a reasonable price and converted into day coaches or sleepers.

Pullman Accommodations and Railway Passes.—The following rule has been announced by the eastern regional director: "The holder of a railroad pass shall be entitled to purchase but one berth or seat in a sleeping or parlor car for each person named in the pass; if additional space is desired payment shall be made of the additional amount required by tariff regulations governing collection of charges for exclusive occupancy of sections, compartments and drawing-rooms. Sleeping car passes shall be honored to the extent of the accommodations therein provided."

Application for Priority.—The Priorities Committee, through T. C. Powell, member for the Railroad Administration, has advised that it is necessary to designate an official who will be authorized to sign applications for priority under oath. It is desirable that the head of the purchasing department be the official designated to make these applications. In view of the fact that on some lines other officials make contracts for purchases or for construction, etc., it may not be feasible in all cases for the purchasing agent to make the necessary application and it may be necessary to have more than one officer designated. So far as practicable, however, it would be desirable to have one official for each company designated to make the application.

Cars Loaded with Scrap.—In view of the extraordinary demand for coal loading equipment, the Southern regional director has suggested that scrap materials be not loaded until it is reasonably certain that disposition can be provided without delay. Whenever possible the use of coal cars for scrap loading should be avoided. Close co-operation in this respect by departments involved will be of great assistance in the existing coal car situation.

Speed Limit for Troop Trains.—A limit of 25 miles an hour has been placed upon troop trains where any freight cars are handled in the train.

Sleeping Car Reservations.—The regional director of Northwestern railroads announces that the rule prohibiting assignment of space to offices located off the line of sleeping and parlor car runs has been canceled. Hereafter passenger traffic officers of the railroads concerned may assign space at their discretion, but in doing so will exercise care that assignments are made in such a manner as to maintain a minimum amount of vacant space and at the same time afford the traveling public every opportunity to utilize all available space.

Engine Terminal Facilities.—The regional director of Central Western railroads urges that all engine terminals be put in first-class condition before November 1, to prevent a recurrence of the difficulties experienced last winter because of crippled facilities for the maintenance and repair of locomotives.

Diversions of Fruits and Vegetables.—The regional director of Southwestern railroads announces that H. B. Kooser, vice-president and general manager of the American Refrigerator Transit Company will provide facilities for the transmission of information to shippers and receivers, and for handling diversions and reconsignments of all fruits and vegetables in transit over lines in the Southwestern region.

Mr. Kooser will issue instructions as to how the information will be handled.

Surety Bonds, Fruits and Vegetables.—The regional director of Northwestern railroads announces that the fourth paragraph of Circular No. 20 of the Division of Public Service and Accounting requiring that a bond be filed by shippers with initial carriers covering fruits and vegetables shipped on straight bills-of-lading, has been canceled.

Grain Doors.—In a letter dated August 23 the regional director of Northwestern railroads announces that complaints of shortages of grain doors and grain door lumber preventing prompt loading of grain cars are being received, and that it is therefore important that an immediate canvass be made of all grain shipping stations respecting supplies and requirements. Emergency supplies may be transferred from other points if necessary and lumber may be purchased locally if delay to equipment may be avoided thereby.

Employment of Drought Sufferers.—The regional director of Southwestern railroads calls attention to a letter written by the Governor of Texas to the Director General regarding the conditions in the drought-stricken region of Texas. Many of these drought sufferers are in destitute circumstances and are wholly unable to pay transportation to enable them to get where employment may be secured. Southwestern railroads are asked to make use of this opportunity to fill their labor requirements and are authorized to furnish transportation to the men.

Eliminating Dead Movement of Locomotives.—In Order No. 43, dated August 24, regional director of Southwestern railroads calls attention to the prevailing practice of shipping locomotives dead in trains from builders and from foreign line repair shops to points where they are assigned. This movement is exceedingly slow, and the tonnage thus handled amounts to approximately 500,000,000 ton miles per annum. These locomotives should not only be self-propelling, but in many instances could be used advantageously to pull trains while enroute. The circular is supplemented with a set of detailed instructions as to how to handle locomotives of this type.

Baling Requirements for Cotton Fabrics.—"It has been brought to my attention," says B. L. Winchell, southern regional director, "that some cotton mills in this region have been tendering for shipment cotton fabric in bales covered with very thin, sleazy cheese cloth, with the result that the shipments almost invariably arrive at destination with the cover partly destroyed and the goods in a dirty, torn and badly damaged condition. This covering of baled goods is not permitted under classification rules. Will you please see that your agents at points where such mills are located are instructed not to accept this commodity when packed in this way."

Painting and Lettering Freight Cars.—The Eastern regional director has issued the following instructions:

1. The preservation of freight car equipment of all railroads under federal control will be maintained by necessary repainting and restenciling. When paint on freight equipment cars has become perished to the extent of permitting the steel to rust and deteriorate, or the wood to become exposed to the weather, they should be repainted. The car body (including roof) should be entirely repainted if, for any cause, it is found necessary to paint one-third or more of the car. Before applying paint to steel, it should be scraped and cleaned off with a wire brush; wood parts should be scraped so as to clean off all blisters and loose paint, including removal of protruding nails and tacks.

2. The station marking showing where car was last reweighed should not be changed unless the car is reweighed.

3. When repainting freight equipment cars two coats will be applied to all new parts and old parts of body which have been reworked causing removal of paint. One coat will be

applied to parts where old paint is in good condition. Should the old paint be found to such condition requiring two coats, they may be applied.

4. The stenciled letters and numbers on all freight equipment cars will be maintained and identity kept bright. When the lettering or numbering is found in bad condition renew the identity by either repainting the car or by applying new stenciled letters and numbers. In selecting cars for this purpose preference should be given those on which the marking and painting is in the poorest condition.

5. If there is not sufficient paint on car properly to retain the new stenciling, and condition of car does not justify entire repainting, one coat should be applied as a panel back of the stenciling, so that the paint used in applying the numbers and letters will hold; otherwise the marking applied will soon become illegible and make it necessary to again apply the identity marking within a short period.

6. Detention of equipment from service for painting should be avoided when possible. A great deal of this work can be done to open cars in transportation yards when under load in storage.

Theft of Mail Matter.—The law provides that "railroad companies carrying the mails shall furnish all necessary

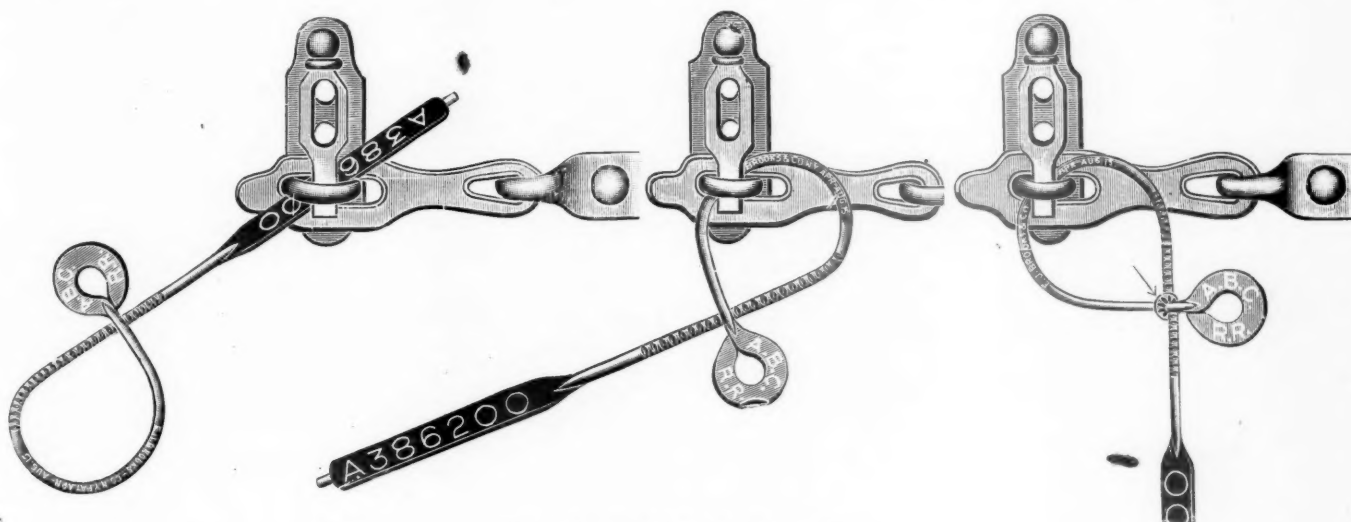
as closed rooms present too great an opportunity for pilfering.

At some of the large terminals where the trucking is made through tunnels, subways and recesses in buildings, there is found to be an opportunity for rifling mails which can be largely cured by supervision and proper lighting. It is the duty and responsibility of the railroads to protect mail in storage and baggage cars, and when such equipment is switched in and out of terminal yards it should be locked or otherwise protected against improper handling or pilferage.

A Self-Locking Car Seal

A CAR SEAL of the self-locking type with no hidden parts has recently been developed by E. J. Brooks & Co., Inc., New York City. It consists of a single piece of steel wire, looped and flattened at one end, on which is stamped the name of the railroad, and flattened at the other end to receive the serial number.

The method of applying and locking the seal is clearly shown in the illustrations. After being properly inserted through the hasp lock of the car door the seal is locked by



Brooks Twist-Lock Car Seal

facilities for caring for and handling them while in their custody * * * they shall provide station space and rooms for handling, storing, and the transfer of the mails in transit * * * and for offices for the employees of the railway mail service engaged in such station work." Reports show a general disregard of the provisions of the law for the protection of the mails.

It is claimed the facilities for storing, trucking and handling of the mails at many railroad depots are totally inadequate. The quantity of mail has increased so much that it is the almost universal practice to store the mail awaiting transfer on trucks to avoid labor in unloading and reloading. These trucks are often without protection, enabling the public and employees to pilfer the mails. Care should be exercised in the selection of railroad employees to handle the mails, and at the larger points systematized, so honest and competent employees will be selected and properly supervised. It is suggested that such railroad employees, especially at larger points while engaged in handling mail, be required to wear the established cap, badge or other adopted identification so that supervising officers, railroad special agents and post office inspectors can more readily determine whether authorized employees only are handling the mail. In providing space at stations for the storage of transfer mail and other mail, it is suggested that screen protection is superior to a closed room

twisting the vertical end of the wire about the horizontal end near the flat loop. On the side of the vertical portion of the wire which comes on the inner or compression side of the twisted loop formed in locking the seal, is a series of nicks which insure that the seal may be locked without danger of breaking the wire. To unlock the seal this loop is simply untwisted and the nicked side of the wire is thereby brought into tension, which insures that the seal cannot be unlocked without breaking. A similar series of nicks is placed on the back side of the horizontal portion of the seal to prevent the possibility of successfully tampering with the seal should an attempt be made to lock it by twisting the horizontal portion of the wire about the vertical.

This seal has been in use on one of the eastern railroads for some time.

RUSSIAN RAILROAD MISSION IN SIBERIA.—Eighty-four of the Stevens Railroad Commission, sent from the United States to Russia in May, 1917, to assist in restoring the Russian railroads and who have been at Nagasaki for eight months, have arrived at Vladivostok. They will begin work on the Siberian Railroad behind the Czecho-Slovak lines between that city and Knabavorsk.

The Work of the Ford Company's Traffic Department

Self-Interest as Well as Force of Necessity Makes Car Conservation One of Its Main Policies

NO ONE INQUIRES nowadays whether heavier loading of freight cars is beneficial to the shipper. Those who have suffered loss and inconvenience in readjusting their business to promote car conservation are reminded that transportation facilities must be carefully husbanded if the tremendous traffic offered for movement by the government and by our factories, mines and farms is to be taken care of. Shippers are likewise thoroughly cognizant of the fact that the existing supply of equipment must be utilized most intensively if their own wares are to move in quantities at all commensurate with their outputs. Car economy, translated into terms of capacity loading and the prompt release of equipment, has become a patriotic duty.

Although it is unnecessary to justify car conservation from the point of view of the shipper's self-interest, it is nevertheless a fact that intensive loading is, and for a number of years has been, a cardinal principle of the policies of the Ford Motor Company, Detroit. Needless to say, it was adopted as a Ford policy because it paid and paid well. Just how well it pays, in dollars and cents, is for reasons dictated by modesty or business considerations, not available for publication. Suffice it to say, many thousands of dollars have been saved yearly by close supervision of loading, and while the curiosity of the reader as to *how much* is saved cannot be satisfied, *how* it is saved—a more important matter from the shipper's standpoint—will be outlined in this article.

The instrument through which the Ford Motor Company supervises the handling of shipments to and from its plants is its traffic department. This branch of the organization has an intimate knowledge of all commodities shipped and received, as well as the classifications and tariffs which govern their movement. The department sees to it that goods are properly packed, billed and described, and devises loading methods which permit increased utilization of cars, either through new schemes of packing and stowing shipments or through loading different commodities in the same car when mixing is authorized by the classifications. The absence of specific ratings for the major portion of automobile parts makes it necessary to classify them by analogy. It is obviously essential, therefore, that the Ford traffic department be thoroughly familiar with the 3,000 parts constituting the Ford automobile—the relation of one part to another, the kind of material going into each and how it is manufactured.

Average Carload Weight Increased 10 Per Cent in 60 Days

The phase of the traffic department's work which is of most general interest is without doubt the heavier loading of cars. It may seem surprising, but it is nevertheless a fact, that the average weight per loaded car shipped by the Ford motor plant was increased 10 per cent within the short period of 60 days. Through this increased efficiency in loading the number of cars required for outbound shipments from the Highland Park (Detroit) plant of the Ford company was reduced from 110 cars per day at the beginning of October, 1917, to 100 cars in December.

The science of loading cars as practiced by the Ford traffic department is applied to two distinct problems—shipments of parts consigned to the numerous assembly plants and shipments of set-up machines. The loading of parts lends itself much more readily to the conservation of car space than the loading of set-up automobiles, especially when mixing privileges authorized by the classifications permit the stowing of different parts in the same car. Unlimited mixing is

authorized by Rule 10 of the Official Classification. The only restrictions specified are that the freight charges on the highest rated article shall apply on the entire lading and that the weight of the commodity with the highest rating shall be at least 10 per cent of the minimum per car provided in the classification. Limited mixing has been permissible in Southern Classification territory since October 1, 1915, and in Western Classification territory since April 20, 1917. The shipment of two separate carloads in one car is authorized by all three classifications.

In general, the secret of successful mixing is to load heavy and light commodities of the same class together. The mixture of knock-down fenders and front axle parts, for instance, permits loading not only to stenciled car capacity, but to the cubical limits of equipment as well. Previous to the war carloads of these parts averaged about 40,000 lb., or 4,000 lb. in excess of the minimum weight. Now the average lading is 90,000 lb. By knocking down automobile tops and loading them with cushions the same number of top sets which formerly occupied an entire car now take up only half a car. Radiators, as shown in the illustration, are loaded to the car roof, but on account of their low specific gravity do not exceed to any great extent the minimum weight necessary to secure a carload rating. By an ingenious method of stowing motors upright by screwing them to iron quoits on the car floor, as illustrated in the photograph, one-third of the car space, under the roof, is conserved for miscellaneous light parts. Because of their high specific gravity motors are generally loaded into small cars.

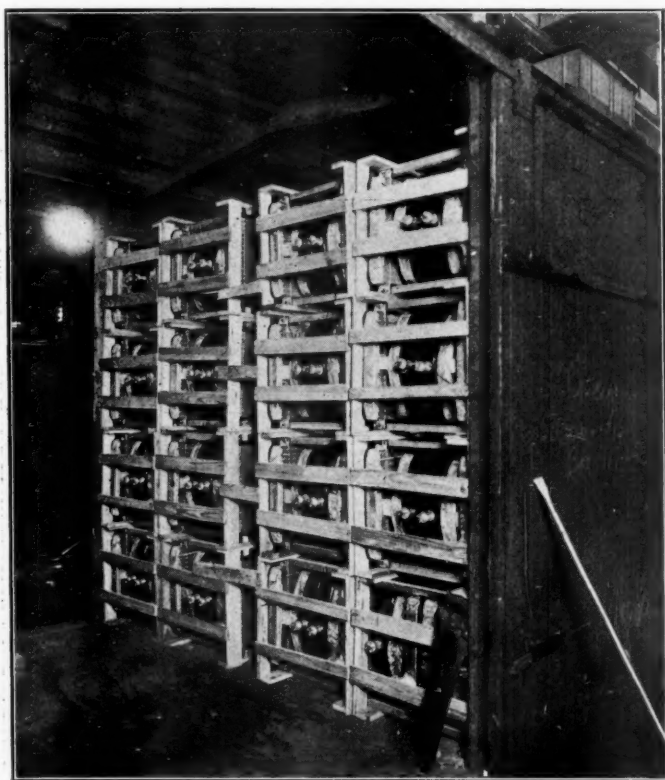
The car of windshields, seat cushions and spark coils, shown in the photograph, is loaded to cubical capacity. It contains 1,080 windshields, 320 cushions and 500 spark coils, and weighs 34,000 lb. The automobile gear parts and fenders shown in an early stage of stowing in the illustration, average 89,000 lb. to 100,000 lb. in weight per car when fully loaded. The interior view of the car being loaded with seat cushions indicates the care taken to prevent injury in transit. Seat cushions are the bulkiest material shipped by the Ford company with the exception of closed car bodies. A car fully loaded weighs 14,000 lb. Chassis are generally loaded diagonally, as this method enables the company to ship an average of 10 per car. Wheels which were formerly in fourth class in Official Classification territory could not be shipped in mixed carloads because very few automobile parts are in that class. When wheels were reduced to fifth class more intensive loading was made possible by the application of the mixing principle.

Aside from the advantages derived from the lower rates on knock-down shipments, limited track space and a general shortage of equipment has made them practically a necessity. Nevertheless the Ford company still ships a considerable number of set-up motor cars, most of which go to the territory served directly by the Detroit plant. The remainder of the country is largely supplied by the assembly plants, located at 29 different cities, which assemble automobiles from the parts received from the parent plant. Coupelets, however, are an exception to the rule, as they cannot be shipped in parts without injury to the finish of the bodies. It was formerly a great problem to use maximum car space in shipping coupelet bodies, but this difficulty has been overcome by loading automobile parts with them. For instance, it is not now uncommon for a carload of coupelets to contain 200 windshields or 115 springs. The loading of set-up automobiles of all types also has been studied to good advantage

by the Ford traffic department. Formerly six touring cars was considered the absolute limit of a set-up carload. Now a 40-ft. car containing two touring cars, a sedan, a motor truck, a coupelet and a runabout is not an unusual shipment. This is possible through a well-planned arrangement of the bodies in the car and by attaching the windshields to the walls and bracing the wheels in the corners and on the floor.

Ratings on Automobile Parts

The automobile industry has had such a remarkably rapid growth that it has been impossible for any classification com-



Radiators Are Loaded to the Car Roof

mittee to keep pace with it. As a consequence the extent to which it has been possible to utilize the maximum capacity of equipment in shipping automobile parts has been limited by the existing ratings, rules and regulations of the classifications. As was previously pointed out, the mixing privilege is permitted by Rule 10 of Official Classification and is also authorized to a certain extent by the two other classifications. The traffic department of the Ford Motor Company has labored consistently to secure carload ratings on automobile parts where they did not exist, as well as the rectification of inconsistencies in existing ratings to permit the fullest application of the mixing principle, thereby insuring the maximum use of railroad equipment.

Prior to February, 1915, there were very few carload ratings on self-propelling vehicle parts in Southern Classification territory, while c. l. ratings on non-self-propelling vehicle parts were quite numerous. Perhaps the main reason for this incongruity was that most automobiles moved in the South only in set-up shape with occasional l. c. l. shipments of repair parts. There was no occasion for granting c. l. ratings on automobile parts until in the expansion of its business the Ford Motor Company established two assembly plants in the South, one at Atlanta, Ga., and the other at Memphis, Tenn. The Ford company thereupon applied for ratings on its parts, pointing out that while the parts would move at a lower rate a higher minimum weight would insure greater revenue per car to the carriers than the higher rate on carloads of set-up machines with a lower minimum weight.

In reply to the objection that less equipment is required for the shipment of parts than for the transportation of set-up automobiles and that, therefore, the carriers would not really benefit by the change, the Ford company called attention to the fact that the Interstate Commerce Commission has recognized the earnings per car-mile and per train-mile as the fairest tests of the reasonableness of rates. It was also emphasized that the cheaper rates on parts to the assembly points would make prompt deliveries of machines and repair parts to the consumers possible. As a result the demand for automobiles would increase, thus swelling the volume of traffic on parts to the assembly points and making up in a measure the differences, should there be any, in the amount of equipment used in shipping machines in the set-up and completed knocked-down forms. From the point of view of car conservation, the company pointed out, the shipment of parts deserved every encouragement.

High Rates Discourage Industry in South

The most convincing argument presented to the Southern Classification Committee was the presentation of evidence showing that a large part of the territory which, from the standpoint of distance, should have been served by the Atlanta and Memphis assembly plants of the Ford Motor Company was being supplied with set-up machines by the St. Louis branch. A number of concrete examples illustrating this point were cited by the Ford traffic department in its petition. The appended figures, included in the application, are based on ratings granted by the Southern Classification



This Car Is Loaded to Cubical Capacity, Containing 1080 Windshields, 320 Seat Cushions and 500 Spark Coils

Committee in February, 1915. Had they been computed in accordance with the ratings previously in effect the difference in favor of St. Louis would have been much greater. On the basis indicated, the knock-down cost of parts to Atlanta was \$16.65 per machine, or \$99.60 for a carload of six; \$10.66 per machine to Memphis, or \$63.96 for a carload of six; and \$5.25 per machine to St. Louis, or \$31.50 for a carload. A

comparison of the transportation costs from St. Louis and from Memphis and Atlanta points in the South is obtained by adding the cost of shipping the parts to the assembly point to the set-up rate from the branches to final destinations.

RATES PER CARLOAD TO CHATTANOOGA	
Parts for six automobiles to Atlanta.....	\$99.60
Set-up cars Atlanta to Chattanooga.....	57.00
	<hr/> \$156.60
Parts to St. Louis.....	\$31.50
Set-up cars St. Louis to Chattanooga.....	93.00
	<hr/> 124.50

Difference in favor of St. Louis..... \$32.10 per carload

Similar computations of rates to other points in territory tributary to Atlanta and Memphis showed the following comparisons:

ATLANTA TERRITORY			
Place	Total via Atlanta	Via St. Louis	Difference per c. l. favor St. Louis
Jacksonville, Fla.	\$160.60	\$149.50	\$11.10
Lake City, Fla.	204.60	193.50	11.10
St. Petersburg, Fla.	222.60	209.50	13.10
Miami, Fla.	257.60	246.50	11.10
Savannah, Ga.	160.60	149.50	11.10
MEMPHIS TERRITORY			
Place	Total via Memphis	Via St. Louis	Difference per c. l. favor St. Louis
Columbia, Tenn.	\$138.96	\$117.50	\$21.46
Nashville, Tenn.	113.96	92.50	21.46
Knoxville, Tenn.	147.96	140.50	7.46
Clarksville, Tenn.	102.96	92.50	10.46
Bristol, Tenn.	171.76	137.70	34.06
Greenwood, Miss.	127.96	127.46	.50

The case presented by the Ford company was so conclusive that the Southern Classification Committee granted the application for new ratings substantially as filed, and put them into effect late in the summer of 1915. As a result of the more liberal policy of this committee the Atlanta and Memphis assembly plants of the Ford Motor Company have increased in importance and two additional branches have been opened in the South, viz., at Louisville, Ky., and Charlotte, N. C.

Importance of Proper Billing, Packing and Loading

It is obvious that a company which ships over 3,000 different commodities in addition to set-up automobiles must have an intimate and practical knowledge of rates and ratings. The general traffic department of the Ford company maintains up-to-date files of tariffs and classifications and, in addition, carefully worked-out schedules showing the application of the classifications to each of the parts making up the Ford machines. These schedules are of particular importance because most automobile parts are not covered specifically by the classifications, and therefore must be classified by analogy. The schedule for each classification contains the l. c. l. and c. l. ratings, the minimum weight per carload, the description and the weight of each part manufactured by the Ford company. In addition, an index of the articles, by alphabetical arrangement and by part number, facilitates ready reference to the schedule. The inter-territorial application of each classification is also shown, so that it can be readily determined which classification governs a given shipment.

Familiarity with the classifications is absolutely essential if goods are to be packed and loaded properly. If low and high-rated articles are packed together the high rate, of course, applies to the whole consignment. An error of this type was recently cited in the Ford Traffic Bulletin by W. S. Hogue, general traffic manager. A box of bolts and washers weighing 230 lb. also contained about 20 lb. of felt gaskets. As the gaskets were first class and the bolts and washers fourth class the company was forced to pay the first class rate on the entire shipment.

Mr. Hogue considers the maintenance of an up-to-date tariff file one of the most important functions of his department. Rate files alone are not at all satisfactory because of the absence of rules governing their application. To illus-

trate: The first class rate from St. Louis, Mo., to Kansas City is 55 cents per 100 lb. The Western Classification provides a minimum charge of 100 lb. at the rate applicable to the article shipped. Assuming that the commodity to be shipped takes a first class rate, the minimum charge in that case is 32 cents, because the tariff provides that the minimum charge in Western Trunk Line territory is third class.

Inasmuch as railroad billing clerks cannot be expected to have an intimate knowledge of the goods tendered by hundreds of shippers and the phraseology ordinarily used by different companies in describing them, the Ford traffic department adheres very closely to the technical language of the classification or tariff in describing and billing freight. It has learned by experience that proper description prevents many unnecessary disputes with the carriers.

How Shipments are Handled

As orders are received from the various assembly plants

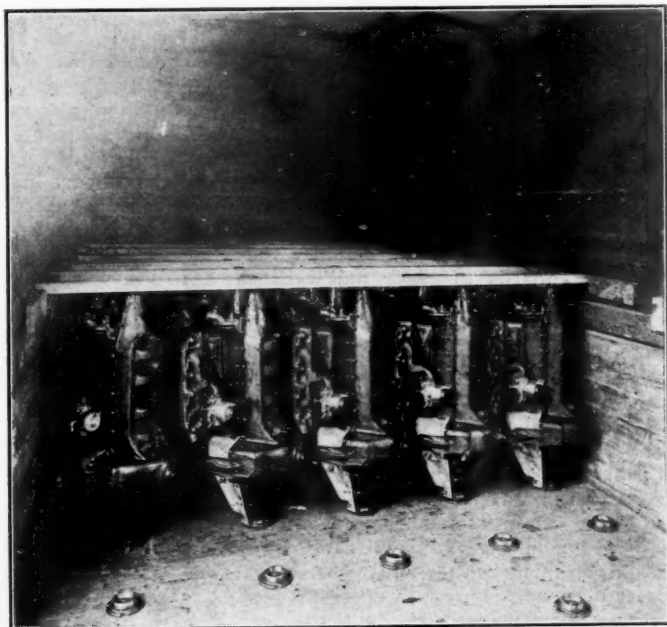


Car Being Loaded with 2000 Fenders, Together with Gear Parts. Cars Containing this Mixture Weigh from 89,000 to 100,000 Lb. Net When Fully Loaded

the traffic department determines whether they can be filled in part or in full, and makes out requisitions for them, which are sent to the stock department. The parts ordered are then sent by the stock department to the loading dock, where two classification experts determine how they shall be assembled in cars to take advantage of the best ratings and how the cars shall be routed. Each night the office of the loading dock notifies the yardmaster of the number of cars which will be required for the following day, thereby insuring a supply of equipment when the shipments are assembled and ready for loading.

The billing in connection with each shipment is handled in a very simple and effective way. The invoice which goes to the branch through the mail, and copies thereof which are filed in the accounting department and manufacturing department, the requisition on the stock department, the packing slip which accompanies the goods in the car and two copies thereof which are filed in the service department—are all filled out in one writing. A separate set of bills is made out for each part shipped to avoid the complications which would result if all the parts ordered by a branch were not immediately available for shipment. Each bill also contains spaces for entering both the quantity of a part ordered

and the quantity shipped, as in some cases it is impossible to ship at once the entire amount of any one article ordered by a branch. The invoice and the copy filed in the accounting department, as well as the packing slip, also contain entries giving the price of each part shipped. When a car has been completely loaded the invoices and the packing slips are pinned together and totaled, the packing slips being sent to the branch in the car, and the invoices being sent respectively to the accounting department and by mail to the branch.



Motors Are Stowed Upright, Being Screwed to Quoits on the Car Floor

The packing slip also contains the following entries: The number of each package contained in a shipment, the kind of package, its weight and its rating, and the track on which the car was loaded. Generally packages are weighed by official weighmasters of the Western Weighing and Inspection Bureau. This plan makes it possible to compute the total weight of a car, thereby preventing subsequent detention for weighing the car in its entirety. Two copies of each packing slip are filed in the service department, one numerically according to the order number and the other alphabetically according to the assembly plant. This enables the service department to give accurate and prompt information to a branch concerning the loading of a car in case packing slips are lost or destroyed.

The Auditing of Freight Bills

The auditing of freight bills is one of the most important services which the Ford traffic department performs for its company. Hardly any two freight auditors working independently of each other and without consulting each other as to methods interpret classifications with results that are identical. In the words of Mr. Hogue, general traffic manager of the Ford Motor Company, "no business can afford to trust a matter involving dollars and cents entirely to the seller." This applies equally as much to transportation as to any other commodity. If the service of a rate expert is necessary in the matter of standardized commodities it is doubly necessary in the matter of automobile supplies, in which case the practice is to classify and rate by analogy. Formerly the Ford company settled its indebtedness to the railroads only after it had carefully audited the freight bills against it and inaccuracies had been corrected and matters

of dispute settled. Under the new rule inaugurated by the Railroad Administration requiring the prepayment of freight the auditing of bills is equally important, although errors in billing or rating can be rectified only by filing claims after the bills have been paid.

Traffic Department a Benefit to Railroads as Well as to Ford Company

The traffic department of the Ford Motor Company is performing a service which is beneficial not only to the industry which employs it, but also to the railroads and the country at large. To be sure, its close study of car loading has been prompted in large measure by reasons of economy, but nevertheless it has proved a boon to the carriers in a protracted period of car scarcity and likewise to a nation calling for maximum transportation with the existing facilities. In petitioning classification committees for revised ratings and mixing privileges the Ford company has also been actuated primarily by selfish motives. The changes which it has secured in this manner, however, have made heavier car loading possible, thus aiding the cause of car conservation at a time when it is exceedingly important. The close attention paid to the billing and description of freight, intra-



The Seat Cushion Is the Bulkier Part Shipped. A Car Fully Loaded Weighs About 14,000 Lb

company billing of shipments, the auditing of freight bills and the maintenance of up-to-date tariff and classification files is, of course, highly essential in an industry which ships and receives such a large volume of freight as the Ford Motor Company. The thorough and painstaking manner in which the traffic department of the Ford company is performing these functions warrants admiration by the carriers and emulation by shippers and consignees.

THE TRANSPORTATION FACILITIES of the American Expeditionary Army are fully meeting the strain placed upon them in keeping the moving troops supplied and in bringing up heavy guns and ammunition, members of the House Military Committee were told on July 26 by Secretary of War Baker and General March, Chief of Staff.

General News Department

Director General McAdoo has selected a flag which will be flown by the 79 vessels operated by the Railroad Administration. The flag has the letters U. S. R. A. in blue on a white field with a red border.

On the Long Island Railroad, "club cars," used for suburban "commuters" desiring special facilities, have been ordered discontinued, and the federal manager thinks that parlor cars will also be discontinued, or will be converted into coaches so that they will accommodate a larger number of passengers.

Trackmen are working, at present, seven hours a day, on parts of the Baltimore & Ohio. Because of a scarcity of laborers, a special train is run from Cumberland, Md., in the morning, starting at 7 o'clock and returning at 6 p. m., carrying men to work on the Newburg grade. The trip occupies about two hours, so that the men are on the cars four hours each day.

The Baltimore & Ohio passenger station at Hagerstown, Md., has been closed and trains will run to and from the station of the Western Maryland. The Baltimore & Ohio reaches Hagerstown by a branch, 24 miles long, from Weverton, Md. A branch of the Baltimore & Ohio from Hagerstown eastward to Security, Md., two miles, built about two years ago, is to be taken up.

The use of anthracite by the railways of Canada must be reduced this coming winter by about 60 per cent. This is an order from the Canadian Railway War Board directing the roads to use no anthracite in stations or elsewhere, except in Baker heaters in passenger cars, when heat from the engine is unavailable. Ordinarily the Canadian roads would use nearly 100,000 tons of anthracite yearly.

At Main street crossing, Bloomington, Ill., according to the Safety Magazine of the New York Central Lines, there has been no accident to any person during the past ten years; and a large measure of the credit for this record is accorded to John Dillon, the flagman, who has served at this crossing throughout that time. Seven tracks cross the street at this place, two of them being the main tracks of two different railroads, and switching engines are at work there every day. The flagman, says the Magazine, "has not the shanty habit. He displays the stop sign in the middle of the street and he holds it high."

An automobile loaded with silk was stolen by highwaymen near Somerville, N. J., on the afternoon of Wednesday, August 21, and the driver was murdered. The silk, said to be worth \$40,000, had been shipped from Newark, N. J., to Allentown, Pa., this mode of transportation having been adopted, it is said, because of the congestion of freight traffic on the railroads. The driver's helper, riding on the rear of the load, was intimidated. The driver himself, who was armed, seems to have fought bravely before he was overcome. The load of silk was recovered, soon after, a few miles away, having been abandoned by the robbers who, evidently, became frightened.

Fires in the National forests have this year been so serious that President Wilson has authorized a loan of one million dollars to the Forest Service for fire-fighting expenses. This is to meet serious emergency conditions in the Northwest and the Pacific Coast States. The loan was made from the special defense fund of fifty million dollars placed at the disposal of the President by Congress. Early drouth, high winds, electrical storms, labor shortage, and depletion of the regular protective force as a result of the war have combined to make the fire conditions unprecedentedly bad. The Presidential fund was drawn upon because the appropriation bill for the Department of Agriculture for the current year has not yet been passed.

Landing fields for the accommodation of air pilots are being established at intervals of about 100 miles clear across the continent, and the War Department expects that before long these well-marked, safe landings will furnish for air pilots facilities analogous to those afforded by water tanks for transcontinental locomotives. Besides oil and gas, these fields will supply to the pilots shelter and limited machine shop facilities, maps, charts, and barometer and thermometer records. New York, Pennsylvania, Ohio, Illinois, Georgia, Texas and California have already established lines of such landing fields. Arkansas, Mississippi, Alabama, New Mexico and Nebraska will soon be equipped. Flying by compass has become an established practice but landing fields, like beacon lights, help the pilot to pick his course, even though he has his compass. Most of the landings today are on army fields, but local boards of trade and business men's associations have begun to compete for the location of sites.

Through Train from Washington to Atlanta for Express Shipments

Director General McAdoo has arranged to put on an exclusive train on the Southern Railroad for express shipments between Washington and Atlanta, September 1, which will result in a substantial improvement in the service and afford relief to several important passenger and mail trains. The Railroad Administration in announcing this new service says that, it was not possible to do this when the roads were operated separately, as there was not enough express business to warrant a special train for express shipments on any one line.

Extension of Sailing-Day Plan

A. H. Smith, regional director, Eastern Railroads, announces the appointment of G. C. Woodruff, New York City, as chairman of a committee to consolidate l. c. l. shipments throughout the eastern region, the committee working through the district directors. The "sailing-day" plan for the consolidation of shipments to save freight car space is to be established at all important points, wherever practicable; and at cities where there are two or more roads there will be members on the committee from each road so as to provide the largest measure of practical co-operation. The regional director has called for statements showing the volume of l. c. l. freight from all import points for the first ten days in August, these statements to be made the basis of plans for consolidating tonnage, not only on specific days, but on specific routes, wherever it is possible, thereby to effect economy and conservation while giving adequate service to the public.

National Safety Council

The meeting of the National Safety Council at St. Louis, September 16-20, will be addressed, on the evening of the first day, by Hon. Franklin K. Lane, secretary of the interior. Mr. Dow's motion picture, "The Rule of Reason," will be exhibited on the same evening. The Steam Railroad Section of the Congress holds sessions on Tuesday afternoon, and both morning and afternoon of the two days following. Among the speakers are H. W. Belnap, manager of the safety section, Division of Transportation, United States Railroad Administration; L. Kramer, federal manager of the St. Louis-San Francisco; J. C. Clark, Oregon Short Line; T. H. Carrow, Pennsylvania; C. W. Hammond, New York Central; Robert Holland, St. Louis-San Francisco; J. A. Doyle, C. St. P. M. & O.; C. B. Floyd, N. Y. C.; E. M. Switzer, C. B. & Q.; W. J. Hills, N. C. & St. L. For Thursday the program calls for a "roundtable" meeting continuing throughout the day. The chairman will be Marcus A. Dow (N. Y. C.). On

Friday there will be a meeting of the Car Builders' Section, dealing principally with the hazards connected with the construction of steel cars.

Railway Signal Association

The principal business to be done at the annual meeting of the Railway Signal Association, at Hotel McAlpin, New York City, September 19 and 20, is that to be reported by committees 2, 3, 5, 6, 8, 10, 11 and 13. The following subjects are included: Specification for Saxby & Farmer interlocking; specification for painting; and for pipe compensation. Typical circuits for power interlocking; specification for impregnated fibre conduit; rules for maintenance of mechanical interlocking plants; and movement of trains by signal indications without train orders. Drawings of standard designs presented at the March and the June meetings and specification for signal roundels, lenses and glass slides. Report of committee No. 7 on direct current relays, and report of committee No. 8 on alternating current automatic block signaling. Application of aspects indicating that a train must take siding at a non-interlocked switch; directions for installation of lead type stationary storage battery; concrete battery box, and round jars.

Members are reminded that, for their own convenience, they should bring to the meeting their copies of the Journal for March, June and September.

Government Interested in "Carbocoal"

The United States Fuel Administration has issued press notices to the effect that the United States Government has become interested in the establishment of a plant for the manufacture of carbocoal at Clinchfield, Va. The plant, which is now in the preliminary stages of construction, will have a capacity of treating several hundred thousand tons of bituminous coal annually. The plans for the plant and the grounds allow for an eventual capacity of 1,500,000 tons per year. By a new process of low temperature distillation, invented by Charles H. Smith and described in the *Railway Age* of February 8, page 324, bituminous coal is treated in such a manner as to recover greater quantities of the valuable by-products, such as toluol, sulphate of ammonia and valuable oils. From the residue is made a valuable smokeless fuel, in the form of briquettes. Tests of "carbocoal" by the Navy disclose that it contains less than four per cent volatile matter, rendering it practically smokeless. The new plant, which is expected to be in operation early in 1919, is being built near the junction of the Carolina, Clinchfield & Ohio and Norfolk & Western. The Fuel Administration and the Ordnance Bureau of the War Department are co-operating in the construction of the plant.

British Railway Accident Record

The report of railroad accidents in Great Britain for the year 1917 shows only one passenger train accident which was fatal, but in that one the number of passengers killed was twelve. Only five employees were killed in train accidents; and striking decreases are shown in many items in the report. Fatal accidents to persons passing over highway grade crossings numbered 50, as compared with an average of 66 in the preceding ten years; and trespassers killed number 278, as against an average of 445. The employees killed in coupling and switching numbered 73, as compared with 98 in the last preceding year, and other accidents occurring to men while at work showed decreases. The diminution in the number of employees in service, on account of the war, has affected the accident figures both ways. At the end of the year, 11 principal railways reported 134,000 employees as having enlisted, and the places of these men were taken by 42,000 other men, generally less skilled and less able-bodied; and 41,000 women had been taken into the service. Freight traffic was 48 per cent heavier than in 1913, while passenger traffic, even independently of military traffic, was heavier than ever before. The totals of passengers and employees injured show such large reductions, in some departments, that the suspicion arises that, under the relaxed requirements of the Board of Trade, the railway companies are not reporting so many of the less important bodily injuries as formerly

was customary. Another observation, in connection with the reduced figures, is that the men who left the railway service to enter the army, men who have the fighting spirit, are the same men who, in working about freight trains, or in handling machinery, are the ones who will take chances.

Staff System for Track Repairers

A "Ganger's Occupation Train Staff"—in other words, a device by means of which a track foreman, repairing track, can protect against approaching trains without sending out flagmen, has been devised by the Railway Signal Company, London, and is described in a recent issue of the *Railway Gazette*. The line wire connecting the two signal stations at the two ends of the block section is run through a cabinet in the trackman's hut and there controls a special staff. The trackman who wishes to use a staff first speaks to the signalmen over the telephone, and if they are agreed, and close the proper circuit, the staff is released. The withdrawal of the track foreman's staff locks the staffs at the regular staff stations, making them inaccessible, for the use of trains, until the trackman's staff has been restored to its place.

The makers suggest also that this arrangement would be useful where there is in the line, between staff stations, a draw bridge which is not of sufficient importance to warrant the maintenance of regular signaling and interlocking.

Reserves of Bituminous Coal

The tremendously increasing demand for coal for special war purposes in the eastern part of the country, particularly for the Navy and Transport Service, is making it necessary to draw more heavily on the eastern coal fields than was originally contemplated. It has been found necessary, accordingly, to limit the amount of coal that industrial plants would be allowed to accumulate and to fix a uniform amount for each state.

The maximum limits decided upon are as follows:

	STEAM COAL—MAXIMUM NUMBER OF DAYS' SUPPLY ALLOWED		
	Railroads and other public utilities	Preferred industries	Non-preferred industries
Maine	120	90	30
Massachusetts, Vermont, New Hampshire, Northern New York.....	90	60	30
Connecticut, Rhode Island.....	75	45	20
Southern New York, New Jersey, Delaware, Eastern Pennsylvania.....	30	30	15
Maryland, District Columbia, Virginia, North Carolina, South Carolina, Georgia, Florida, Western Ohio.....	30	30	15
Western Pennsylvania, West Virginia, Eastern Kentucky, Eastern Ohio.....	30	20	15
Lower Michigan	90	45	20

Western Pacific Stockholders Protest Against Joint Operation with Southern Pacific

The joint operation of the Western Pacific and the Southern Pacific under one federal manager has resulted in the initiation of certain operating changes which have called forth strenuous opposition on the part of Western Pacific stockholders, members of the railroad brotherhoods, shippers and others. The proposed changes which have occasioned the most serious opposition are briefly as follows: The termination of all Western Pacific passenger runs at Sacramento, Cal., giving the Southern Pacific a monopoly of passenger traffic between that city and San Francisco; the abandonment of the Western Pacific track from Tracy, Cal., to Niles and the use of the Western Pacific line from Sacramento, Cal., to Wells, Nev., from Niles, Cal., to Oakland, and from Tracy to Sacramento, as double track with the Southern Pacific.

Attention was first called to the pending order by members of the railroad brotherhoods, who saw in the plans the elimination of Western Pacific passenger trains between San Francisco and Sacramento. Holders of Western Pacific stocks and securities saw in the order a move which would result not only in cutting down the Western Pacific's passenger revenue and destroying the "good will" of the passenger traveling public, but a step which would virtually make the Western Pacific a feeder of the Southern Pacific. As the result of numerous appeals to Director General McAdoo by Western Pacific

stockholders, the United States senators of California, members of the California Railroad Commission and others, the Railroad Administration has temporarily suspended the proposed order. It is proposed as an alternative measure that the Western Pacific and the Denver & Rio Grande be combined under one federal manager for purposes of operation so as to permit those roads to retain their identity as an independent route to San Francisco.

Meeting of the Metals Associations

The American Foundrymen's Association, the Iron and Steel Section of the American Institute of Mining Engineers, the Institute of Metals Division of the American Institute of Mining Engineers and the American Malleable Castings Association, will hold a joint meeting in Milwaukee, Wis., during the week of October 7, at which time an elaborate exhibition of metal working equipment will be made in the Milwaukee auditorium. The keynote of many of the addresses and papers that will be presented at this meeting will be acceleration of production for the prosecution and winning of the war. One of the notable features will be the large number of interesting moving pictures showing the use and manufacture of hand grenades, the civil re-establishment of wounded and crippled Canadian soldiers, the manufacture and launching of ships at the Hog Island yard, Philadelphia, the building of concrete ships, the manufacture of steel by the triplex process, and the causes and prevention of industrial accidents.

Sailing Day Plan in the Northwest

The committee recently appointed by the regional director of Northwestern roads to introduce the sailing day plan in terminals in that region, exclusive of Chicago, is making rapid progress in its work. The plan is now in operation at Minneapolis, St. Paul, and Duluth, Minn.; Superior, Wis.; La Crosse, Marinette and Green Bay, Wis.; Menominee, Mich.; Council Bluffs, Cedar Rapids and Ottumwa, Ia.; Omaha, Neb., and about 90 smaller cities. Although the work is still in its early stages the committee estimates that the saving effected by the plan up to date approximates 2,500 cars a week for the region. Attention is not only being given to the sailing day plan but also to the consolidation of merchandise over certain routes for particular destinations in order to eliminate transfers as far as possible. A careful study is also being made of the possibilities of unifying freight house facilities and reducing the number of cars used in pick-up service. The committee consists of T. W. Proctor, assistant general freight agent of the Chicago, Milwaukee & St. Paul at Chicago, chairman; W. H. Smith, agent of the Northern Pacific at Minneapolis, Minn.; J. A. Lucey, trainmaster of the Minneapolis, & St. Louis at Fort Dodge, Iowa, and F. W. Robinson, traffic manager of the Oregon-Washington R. R. & Navigation Co., Portland, Ore. In addition C. W. Wilkinson, assistant freight claim agent of the St. Paul at Chicago, is on the western coast at present assisting Mr. Robinson in the introduction of the plan in the Puget Sound district. Mr. Proctor, as chairman, has general supervision over all the work being done in the Northwest region, while Messrs. Smith, Lucey and Robinson, have been assigned definite sections of the region to which they will devote particular attention.

CHINESE EASTERN RAILWAY.—A delayed press despatch from Harbin, Manchuria, dated July 24, says that American engineers have been ordered to proceed from Nagasaki, Japan, to Vladivostok, to make repairs to the Chinese Eastern Railway.

THE FOURTH LIBERTY LOAN campaign will begin Saturday, September 28, and close October 19. No American doubts its success; no good American will fail to contribute to its success. The blood of our men fallen in Europe calls to us; our answer must be and will be worthy of them and our country.

LONG AIR MAIL ROUTE.—A press dispatch from Amsterdam, Holland, says that an average of 1,000 packets of mail a day are being carried by airplane between Vienna, Austria and Kiev, Russia, a distance of 750 miles. The trip is made in four stages, the intermediate stops being Cracow, Lemberg and Proskurov. The trip is said to take about 10 to 12 hours.

Traffic News

Men to help in harvest work in western Canada, arriving in Winnipeg on August 17 and 18, numbered about 2,000, mostly from Ontario. Special trains with additional harvesters were expected to arrive on the 21st, the 23rd, the 28th and the 30th.

Toronto newspapers report the completion of arrangements for bringing 3,500 carloads of wood from Algonquin Park, over the Grand Trunk Railway. According to the map, Algonquin Park is about 150 miles north of Toronto. Apparently, however, not all of the wood is to be used at Toronto.

The University of Wisconsin in co-operation with the Chicago, Milwaukee & St. Paul, the Chicago & North Western, the Chicago, St. Paul, Minneapolis & Omaha and the Minneapolis, St. Paul & Sault Ste. Marie, is operating a land clearing special train through northern Wisconsin. The demonstration tour was authorized by the Railroad Administration and the Food Administration. The train consists of seven cars equipped by the university with the assistance of the E. I. du Pont de Nemours Company, Wilmington, Del., the A. J. Kirstin Company, Escanaba, Mich., and the LaPlant-Choate Manufacturing Company, Cedar Rapids, Iowa. The special is stopping an entire day at each demonstration point where trained men demonstrate labor saving machinery, explosives and the latest methods and practices in land clearing. The tour commenced on August 15, and will continue until September 24.

The Southwestern Traffic League

The Southwestern Industrial Traffic League, composed of traffic men of Texas, Louisiana, Oklahoma and Arkansas, was organized following a recent monthly meeting of the directors of the Texas league. Through the medium of the commercial organizations represented by its members the new league proposes to look after the shipping interests of all four states. U. S. Pawkett, of San Antonio, Tex., was elected president, and F. A. Leffingwell, of Houston, Tex., secretary and treasurer.

Coal Production

The decrease in coal production which began after the record week of July 13 not only continued during the week of August 17, according to the weekly bulletin of the United States Geological Survey, but the output during that week also fell below 12,000,000 net tons, for the first time since June 22. Preliminary estimates place production, including lignite and coal made into coke, during the week ending August 17 at 11,910,000 net tons, a decrease compared with the week of August 10 of 379,000 net tons or approximately 3 per cent, but an increase over the corresponding week of 1917 of 1,597,000 net tons or 15.4 per cent. Production necessary during the balance of the summer weeks to make up the past deficit now amounts to 14,270,000 net tons, 247,500 net tons, or approximately 21 per cent in excess of the average weekly production during the coal year to date.

The average production per working day is estimated at 1,985,000 net tons, a decrease compared with the average daily summer requirements of 92,000 net tons, or 4.5 per cent, but 266,000 net tons or 15.4 per cent in excess of the average daily production during the week of August 17, 1917.

The percentage of full time output lost on account of car shortage during the week ending August 10 was 9.8, representing the fifth successive increase in that number of weeks.

Anthracite production for the week ending August 17, as reported by the Fuel Administration, amounted to 1,538,416 gross tons. This was a decline as compared with the preceding week of 51,038 tons. The average production per working day during the week amounted to 256,403 gross tons, compared with 264,909 gross tons during the corresponding week of 1917. The total output of anthracite coal since April 1 aggregates 31,678,364 gross tons, compared with 31,099,765 gross tons for the corresponding period of 1917, a gain of 578,599 gross tons.

Commission and Court News

Interstate Commerce Commission

The Division of Valuation has announced further hearings relative to the protest of the Kansas City Southern against its tentative valuation. The hearing will be held before Examiner R. H. Kendall at Kansas City, September 9.

It having developed that the time assigned for hearings in the consolidated classification case was not sufficient, the commission has made new appointments as follows: At Chicago: petroleum, October 22 and 23; rubber, October 24; furniture, October 25 and 26; packers and poultry and dairy interests beginning October 28; stove and range interests November 4; miscellaneous subjects, November 5 to 8. At Washington—on November 12, for such interests as desire to be heard.

Court News

Acquiescence in Railroad's Occupation of Land

The Alabama Supreme Court holds that where a landowner acquiesces in an occupation for the construction of a railroad, equity will preclude him from afterwards recovering the land in ejectment. In such case there remains in the owner only a right of compensation.—*Boone v. Gulf, Florida & Alabama (Ala.)* 78 So. 956. Decided May 9, 1918.

Damage to Railroad By Construction of State Highway

Action was brought by the Great Northern against the state of Washington for damages to the plaintiff's track resulting from the construction of a state highway. In blasting out a shelf for the highway, slides were caused, which obstructed the track, bent rails, damaged ties, poles and wires and delayed trains. The Washington Supreme Court holds that the railroad was entitled to recover any increased expense incurred in operating its road during the time necessarily consumed in making repairs, such as additional labor and supplies used on account of trains delayed or annulled as a result of the damages to the track.—*G. N. v. State (Wash.)* 173 Pac. 40. Decided May 10, 1918.

Deeds to Rights of Way and Free Passes

The Illinois Supreme Court holds that the fact that performance of a condition subsequent in a deed conveying a right of way, (that the grantors shall have free passage on all passenger trains) was rendered impossible of performance by the Illinois Public Utilities Law regulating fares and prohibiting discrimination, did not divert the estate. The owner was held not entitled to recover possession of the land on the refusal of the railroad company to issue any more passes. The statute is not in conflict with the provision of the federal Constitution prohibiting states from passing laws impairing obligations of contracts, in preventing the performance of the condition.—*Hite v. Cincinnati, Indianapolis & Western (Ill.)* 119 U. E. 904. Decided June 20, 1918.

Safety Appliance Acts—Defective Cars

The Circuit Court of Appeals, Eighth Circuit, holds that under the federal safety appliance act, when a car is hauled past the nearest repair point where adequate help and materials the law is violated, unless there is a showing of a special reason for the movement. It is not a sufficient explanation that main line and foreign line cars were repaired only at the company's terminals, and not at intermediate points where repair shops for branch line cars were maintained.

Under the provision of section 4 as to hauling by chains instead of drawbars a "revenue train" is one that is moved for the purpose of carrying freight or passengers for revenue,

and cars are "commercially used" either when they are loaded, or when, though empty, they are moving to points for the purpose of receiving traffic; therefore it is a violation of the act to move chained cars in a train made up of other defective cars, which cars, however, were used for making deliveries and were set out at various points, this being particularly true where the train, though called a hospital train, was composed of many cars.—*Denver & Rio Grande*, 249 Fed. 822. Decided February 18, 1918.

Exception from Surface Water Rule

A railroad built a track to a plant at the request of the owner and according to his desires, but under objection by the railroad that no drainage could be provided for. The South Carolina Supreme Court holds that the railroad was not liable when surface water flooded the plant. The principle that no one may accumulate storm water on his land so as to throw it on his neighbor in concentrated form and force, to the neighbor's injury, cannot be successfully invoked by one who contracts with his neighbor to do something from which injury results to him as an incidental, if not necessary, consequence of the act.—*Kirkland Distributing Co. v. S. A. L. (S. Car.)*, 96 S. E., 122. Decided March 18, 1918.

Lookout—Persons Asleep on Track

In an action for the death of a person struck by the defendant's train while seated asleep or unconscious on a track infrequently used by pedestrians within an incorporated town, at 10 o'clock at night, the Kentucky Court of Appeals holds that the failure of the engineman to keep a lookout did not make it error to direct a verdict for the defendant. The duty of keeping a lookout depends, not on the fact that the injury occurred in an incorporated town, but on whether the company's track was used by the public in such large numbers with the knowledge and acquiescence of the company that the presence of persons on the track should have been anticipated. One who sits down on a railroad track and goes to sleep is a trespasser, though at a point where persons are accustomed to cross the track.—*Cornett v. L. & N. (Ky.)* 203 S. W. 1054. Decided June 14, 1918.

Safety Appliance Act—Use of Hand Brakes

The Circuit Court of Appeals, Sixth Circuit, holds that, in view of the purpose of the safety appliance act to protect brakemen by obviating the necessity of their going on the top of trains to use hand brakes, the fact that it was necessary to manipulate levers on top of trains for retainers, which were part of the power brake mechanism, does not justify an order of the railroad company requiring freight brakemen to use hand brakes on the descent of a long grade; it appearing that the railroad company directed that all trains should be brought to a full stop before commencement of the descent of the grade, at which time the levers on the retainers could be set.—*G. R. & I. v. U. S.*, 249 Fed. 650. Decided February 16, 1918.

Hours of Service Act—Operators in Joint Service

In an action against the Denver & Rio Grande to recover a penalty for violation of the hours of service act it appeared that one of its operators performed duties and was subject to the orders of the Santa Fe, whose line intersected the defendant's at that point. The Santa Fe, through an accounting between the two companies, made contribution to the operator's salary. The operator was required by the Santa Fe to remain on duty longer than allowed by the act. The Circuit Court of Appeals, Eighth Circuit, holds that the Denver & Rio Grande is liable for the penalty prescribed whether the operator be treated as a joint employee or not, for in any event that company was bound to see that the operator did not remain on duty for an excess period, and if it failed, it "permitted" the operator to perform excess service in violation of the act.—*U. S. v. D. & R. G.*, 249 Fed. 464. Decided February 23, 1918.

Equipment and Supplies

Side Bearings for the Standard Locomotives

In the issue of the *Railway Age* for June 28 it was stated that the orders for side bearings for the tenders of all the standard locomotives ordered by the Railroad Administration had been awarded to A. Stucki & Company. This order has since been changed and the "Tip-roller" side bearings made by Edwin S. Woods & Company, Chicago, have been specified instead. The awards for side bearings for the cars remain unchanged.

Locomotives

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, is in the market for a standard gage saddle tank locomotive, 35 to 40 tons.

Freight Cars

TRUMBULL STEEL COMPANY, Warren, Ohio, is inquiring for 2 all-steel, 70-ton flat cars.

THE GENERAL CHEMICAL COMPANY, New York, is inquiring for general service box cars.

J. A. DELSUR, New York City, is inquiring for 10 to 20 flat cars for export to France.

THE CUMBERLAND & MANCHESTER, Barboursville, Ky., is inquiring for one low side gondola car.

THE AMERICAN STEEL & WIRE COMPANY, Cleveland, is inquiring for 15, 50 to 70-ton steel hopper cars.

THE NORTHWEST TRADING COMPANY, Chicago, is inquiring for 4,500 20-ton box cars for export to Belgium.

THE MONONGAHELA VALLEY TRACTION COMPANY, Fairmont, W. Va., is inquiring for 4 30-ton ballast cars.

Passenger Cars

THE SOUTHERN PACIFIC, New York, is inquiring for 25 interurban cars.

Iron and Steel

THE WABASH RAILWAY has ordered 4 100-ft. turntables weighing 369 tons from the American Bridge Company.

THE MINNEAPOLIS, ST. PAUL & SAULT SAINT MARIE has ordered 4 90-ft. standard turntables weighing 208 tons from the Milwaukee Bridge Company.

THE CHESAPEAKE & OHIO has ordered 803 tons of steel for new shops at Huntington, W. Va., and Richmond, Va., from the Richmond Structural Steel & Iron Works, the Fort Pitt Bridge Works, and the Central States Bridge Company.

Signaling

THE NEW YORK CENTRAL has awarded a contract to the Federal Signal Company for the installation of an electric interlocking plant at Rochester, N. Y. The interlocking machine will consist of a 72-lever frame, having 15 levers for 14 switches and 1 derail; 14 levers for dwarf signals and 15 levers for high signals. Concrete trunking will be installed. Another contract awarded by the New York Central to the Federal Signal Company calls for rebuilding and enlarging the mechanical interlocking plant at Jersey Shore, Pa., which will include a 20-lever, style A machine and type 4 electric home signals. The Federal Signal Company has also received an order from the New York Central for a 36-lever Saxby & Farmer machine to be installed at Yost's, N. Y.

Supply Trade News

The Q. & C. Company, New York, opened an office in the Claus Spreckels building, San Francisco, Cal., on August 21. This office is in charge of **Latham McMullin**.

R. S. Brown, who has been with the G. M. Basford Company, New York, since its establishment, two years ago, was made vice-president of that company August 26.

F. A. Poor, president of the P. & M. Company, Chicago, has gone to Washington, D. C., to enter the service of the American Red Cross, at its national headquarters.

B. A. Epperson, who for ten years represented the Stark Rolling Mill Company, Canton, Ohio, in Indiana, Illinois and the Southern states, has joined the Central Officers Training Camp at Camp Gordon, Ga.

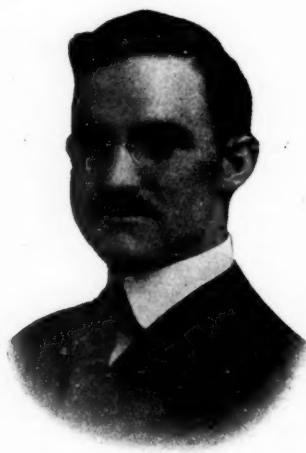
The Cutler-Hammer Manufacturing Company, Milwaukee, manufacturers of electric controlling devices and allied apparatus, announces the opening on September 3 of a branch office in the Union Trust Building, 15th and H streets, N. W., Washington, D. C. This office will be in charge of **H. W. Knowles** and **C. W. Yerger**.

Wilberforce Eckels, who for five years has been assistant western sales manager of the Standard Coupler Company in Chicago, has been commissioned a second lieutenant of engineers. Mr. Eckels is a graduate of Pennsylvania State College, where he took a mechanical engineering course. Owing to the fact that **George A. Post, Jr.**, formerly western sales manager, has been for several months a captain in the ordnance corps, and now Lieutenant Eckels is also in military service, the company has closed its Chicago office.

The Federal Signal Company, Albany, N. Y., announces that approximately 20 per cent of its forces have joined some branch of military service. Among those who have entered the service are: **J. F. Kelly**, general superintendent at Albany, lieutenant in the engineering branch of the service, at Camp Lee, Va.; **J. W. Hackett**, sales engineer at New York, who has been commissioned a lieutenant in the signal corps; **Alfred Renshaw**, engineer of tests at Albany, who has been commissioned a captain in the engineering branch of the army, and **Paul Renshaw**, assistant to the president, at Albany, who is in the navy and is located at Annapolis, Md.

Marshall E. Keig, secretary and treasurer of Harry Vissering & Co., secretary and treasurer of the Okadee Company, and third vice-president of the Charles R. Long, Jr., Com-

pany, with office at Chicago, has resigned from those positions and has been given a leave of absence for the period of the war. Mr. Keig has been accepted for service in the signal corps of the army after having been rejected from the artillery, infantry, marines, railroad regiments and navy on account of defective vision. Before entering the railway supply field, Mr. Keig was employed by the Atchison, Topeka & Santa Fe. From 1904 until 1907 he was in the construction and operating departments and



Marshall E. Keig.

in the ensuing five years was in the general purchasing department at Chicago. He has been with the supply companies which he now leaves ever since severing his connection with the Santa Fe.

ANNUAL REPORT

Brooklyn Rapid Transit System—For Year Ending June 30, 1918

85 CLINTON STREET,
BROOKLYN, N. Y., August 12, 1918.

The summary of financial operations for the year ending June 30, 1918, with comparison for the preceding fiscal year, is as follows:

COMPARATIVE STATEMENT OF THE RESULTS OF THE OPERATIONS OF THE BROOKLYN RAPID TRANSIT SYSTEM FOR YEARS ENDED JUNE 30, 1918 AND 1917

	1918	1917	Increase+ Decrease—
Gross Earnings from Operation.	\$30,506,479.21	\$29,504,018.96	+\$1,002,478.25
Operating Expenses	18,111,804.86	16,741,417.19	+ 1,370,387.67
Net Earnings from Operation	12,394,602.35	12,702,601.77	— 367,909.42
Income from Other Sources...	407,729.16	427,814.75	— 20,085.59
Total Income	12,802,421.51	13,190,416.52	— 387,995.01
Less Taxes and Fixed Charges.	8,690,367.39	7,995,178.23	+ 695,189.16
Net Income	4,112,054.12	5,195,238.29	— 1,083,184.17
Surplus at Beginning of Year.	11,967,272.96	11,562,654.04	+ 404,618.92
Total	16,079,327.08	16,757,892.33	— 678,565.25
Other Credits to Surplus during year	14,573.21	22,603.07	— 8,029.86
Total	16,093,900.29	16,780,495.40	— 686,595.11
Of this amount there has been appropriated:			
Accounts written off.....	*260.35	5,515.97	— 5,776.32
Adjustment of Expenses prior years	3,892.77	*1,088.36	+ 4,981.13
Supercession and Depreciation	935,761.43	289,022.50	+ 646,738.93
Loss from operation of Employees' Restaurants ...	8,362.24	5,631.86	+ 2,730.38
Adjustment of Special Franchise and Real Estate Taxes		135.37	— 135.37
Contingent Reserve	83,147.35		+ 83,147.35
Direct War Expense.....	16,755.96		+ 16,755.96
Allowance to Employees in Military Service		17,345.81	— 17,345.81
Christmas Gratuities to Employees		29,341.29	— 29,341.29
Dividend on B. R. T. Co.'s Stock outstanding	2,233,659.00	4,467,318.00	— 2,233,659.00
Total Appropriations	3,281,318.40	4,913,222.44	— 1,531,904.04
Balance Sheet Surplus.....	\$12,812,581.89	\$11,967,272.96	+ \$845,308.93

It is conceded that adequate and efficient street railroad operation is vitally essential to a vigorous prosecution of the war. No argument is needed to prove that a serious impairment of service would, in the large cities, cripple the activities related to war, or that a radical curtailment of service might almost paralyze war preparations.

Yet these results are already partial realities, or imminent, because

Government at Washington

under war necessity, has directly or indirectly
Drafted tens of thousands of experienced street railroad men;
Diverted additional thousands to war industries;
Established competitive standards of wages which street railroads cannot meet with existing revenue;
Doubled the price of coal, and made it difficult to get at any price;
Increased the price of every commodity street railroads buy;
Absorbed or withheld materials essential to street railroad construction and maintenance;
Commandeered the supply of money;
Increased the rates of interest; and
Imposed millions of new taxes; while

Government at home

has in most cases
Refused, or seems reluctant to grant, even the partial relief which it could give, namely, the right to increase fares, and the suspension of expensive and onerous exactions.

There can be but one result from a continuance of these opposite influences. Only the strongest companies can long furnish transportation at less than cost, and there are few of such companies. Whether the end be finan-

cial losses, far reaching in their affliction, or merely impairment of facilities and service, or both, the adverse effects will be a public injury and a government handicap in our national struggle.

Street railroad companies and their investors will gladly bear their part of the burden of this war. Much sacrifice they must necessarily make, and of this they do not complain. Their problem is no longer one of reduced profits but of excessive losses. It has become with some a question even of preservation of corporate existence, and with all it is a question of continued ability to serve. In any aspect of the situation grave public interest is involved. If local transportation is not an essential industry, then it must accept conditions and reconcile itself to their consequences. If it be an essential undertaking, not only to the ordinary life of communities but to the extraordinary and righteous task to which our country has so splendidly devoted its energies and resources, then street railroad systems must not merely be permitted to live but they must be fully empowered to serve.

They cannot serve without men, materials and money.

Applied to our particular situation the figures presented above, covering the operations of the fiscal year, by no means reflect the measure of burdens to which our system will be subjected during the succeeding year. The renewal of our short term notes for subway financing will call for \$1,154,700 additional interest; our coal will cost at least \$1,000,000 more; our wages will increase much more than \$1,000,000; nobody knows how much larger our taxes will be; and our other costs will correspondingly reflect the higher standards of prices and the increasing difficulties of operation. Moreover, the delays on the part of the city in furnishing for operation the new rapid transit lines which it is constructing will postpone still further the larger volume of normal revenue which we should now be enjoying, and will, unfortunately, prolong the discomforts of existing means of transportation.

Our system has been conservatively and honestly financed and its fixed charges have been comparatively low because of this fact and because so large a part of its capital funds is represented by stock instead of bonds. This stock is now without dividends, and as a condition of financing the renewal of its \$57,735,000 of notes maturing July 1st last the directors were obliged to agree not to pay any dividends in cash during the life of the new notes. To the extent that surplus earnings are available they must be diverted temporarily to pay for improvements now under way or contracted for.

We need more revenue, therefore, not for dividends—just as such an appropriation would be—but for bare necessities, made abnormally severe by conditions for which we are not responsible. For many years we have charged lower fares than our franchises permit. We can not continue so low a schedule, either in justice to our companies or to our patrons. The legal rates, however, if applied strictly, would impose undesirable hardships upon some localities at the expense of others, and we have requested, in lieu of them during these trying times, the right to charge a generally uniform rate, higher than we are now charging, and while higher in some cases yet lower in many other cases than we have the right to charge. In this increase of fare the City, as a partner in the results of rapid transit operation, has more to gain for the relief of its taxpayers than have we. Nearly half our patrons are now being carried on rapid transit lines, built with public and private capital, and of these it may be said, as well as of those carried by the surface lines, that they are receiving their transportation for less than its cost. Certainly there is neither justice nor wisdom in such a situation.

RENEWAL OF MATURING NOTE ISSUE.

It became evident months before the maturity, on July 1st last, of the Company's \$57,735,000 of Six Year 5 per cent Gold Notes (issued for rapid transit purposes) that with the prevailing financial conditions caused by the war it would be impossible to pay off those notes with the proceeds of the sale of long term bonds, or to renew them except with the co-operation of the Federal Government and at a considerably higher rate of interest. The War Finance Corporation, created by Act of Congress, furnished the medium for Government assistance, and negotiations with the Board of Directors of that Corporation and with the bankers who purchased the original issue of notes resulted in an offer to noteholders of the following options:

A—To accept for their holdings 30 per cent in cash and 70 per cent in new Three Year Seven Per Cent Secured Gold Notes.

or

B—One hundred per cent of their holdings in an equal face amount of new Three Year Seven Per Cent Secured Gold Notes.

The money necessary to enable the company to make partial payment upon the maturing notes is to be advanced by the War Finance Corporation to Brooklyn Rapid Transit Co., and for such advance the company will deliver to the War Finance Corporation its new Three Year Seven Per Cent Secured Gold Notes (of the same issue as are those delivered to assenting note-holders) to the amount of the advance.

The response from note-holders has been prompt and favorable. Up to August 12th holders of 97.39 per cent of the maturing notes had accepted the plan of renewal—holders of \$54,262,000 of notes choosing Option A and holders of \$1,967,000 Option B.

With the approval of the War Finance Corporation the plan was declared operative on July 16, 1918.

Besides the increase in rate of interest from 5 to 7 per cent the conditions attached to the new note issue require the pledge of additional collateral (referred to below) and an agreement that while the new notes are outstanding

"the Company will pay no dividends upon its capital stock in cash or in any securities or scrip unless such security or scrip shall by its terms rank subsequent to the rights of the holders of such notes as against any of the assets of the Company."

The new note issue will be limited to \$57,735,000 face value, under an indenture to the Central Union Trust Company of New York, as Trustee, dated July 1, 1918. The notes will mature July 1, 1921, but may be redeemed, as to all or part, at the option of the Company on any interest date on thirty days' previous notice at a premium of one-half per cent for each six months which the notes may still have to run at the date of redemption. The new issue of notes will be secured by the collateral now deposited with the Trustees to secure the retired notes, to wit:

\$57,735,000 New York Municipal Railway Corporation's First Mortgage 5 per cent Sinking Fund Gold Bonds, and
\$10,000,000 Brooklyn Rapid Transit Co.'s Refunding Mortgage 4 per cent Gold Bonds,

and additionally by \$29,000,000 face amount of Brooklyn Rapid Transit Company Consolidated and Refunding Mortgage Ten-Year 6 per cent Gold Bonds (for a description of which see below). It is expected that the \$10,000,000 Brooklyn Rapid Transit Refunding Mortgage 4 per cent Gold Bonds will subsequently be exchanged for a similar face amount of Consolidated and Refunding Mortgage Ten-Year 6 per cent Gold Bonds—making total amount of such latter bonds deposited as collateral \$39,000,000.

The indenture further provides that the company will cause to be pledged thereunder any additional Consolidated and Refunding Mortgage Gold Bonds to an amount equal at face value to expenditures made by the Company out of its current surplus earnings for capital purposes and for which the Company may be or become entitled to draw bonds from the Trustee, as well as any New York Municipal Railway Corporation First Mortgage 5 per cent Sinking Fund Gold Bonds acquired by the Company with such current surplus earnings.

COMPANY'S NEW MORTGAGE.

Pursuant to authority conferred by stockholders at the special meeting held May 23, 1918, the Company has since the close of the fiscal year executed and delivered to the Central Union Trust Company of New York, as Trustee, its Consolidated and Refunding Mortgage, dated June 1, 1918. As previously explained to stockholders this mortgage is intended to take the place of the Refunding Mortgage of July 1, 1902, under which no bonds bearing interest in excess of 4 per cent could be issued. The new mortgage is for the same maximum amount, \$150,000,000, but is elastic in its provisions in respect to rate of interest, convertibility into stock, maturities and redemption privileges—these being determinable by the board of directors at the time of issue of any series of bonds. The bonds of any series may, by action of the board of directors, be exchanged, after issue and before sale, for bonds of another series, bearing a different rate of interest, of different maturity and with different redemption clauses. Likewise, any bonds which may have been disposed of and which contain redemption privilege may by redemption be refunded into other bonds of the same mortgage bearing a lower rate of interest.

Thus the Company is provided with a mortgage under which bonds may be issued as capital expenditures are made and occasion requires, and disposed of from time to time according to the varying conditions of marketability, and under which bonds sold in times of high interest rates may be replaced later with bonds carrying lower interest. The weakness of the old mortgage was in its limitation of the interest rate to 4 per cent, and as a result the Company has received from the Trustee for capital expenditures made \$22,401,000 of Refunding 4 per cent bonds, which it has been unable to sell except at considerable discount because there has been for many years no market for 4 per cent bonds at prices approaching par, and which therefore it has not sold.

It is expected that in due time these treasury 4 per cent bonds will be exchanged for bonds issued under the new mortgage and bearing a higher rate of interest.

Of the \$39,000,000 Ten-year Six Per Cent Bonds to be issued under the new mortgage and deposited as collateral to the Company's Three-Year Seven Per Cent Secured Gold Notes, \$29,000,000 will be returned to the Trustee when no longer needed for that purpose. The remaining \$10,000,000 will, when released, be returned to the Company and may, before sale, be exchanged, if thought desirable, for bonds of later maturity and bearing a lower rate of interest.

The Refunding Mortgage of July 1, 1902, is now closed and no more bonds may be issued under its provisions. All bonds heretofore issued under that mortgage and now outstanding will, as they are exchanged or acquired, be deposited with the Trustee of the new Consolidated and Refunding Mortgage as further protection to the lien of the latter mortgage. The amount of Refunding Mortgage 4 per cent bonds now outstanding is \$27,621,000, of which \$24,182,000 are in the possession of companies of the Brooklyn Rapid Transit System, and \$3,439,000 are in the hands of the public.

The bonds issuable under the new Consolidated and Refunding Mortgage of June 1, 1918, may be used as follows:

- \$7,000,000 for acquiring and retiring a like amount of bonds issued under the B. R. T. Mortgage of October 1, 1895.
- 27,621,000 for acquiring and retiring a like amount of First Refunding Mortgage Gold Bonds issued under the B. R. T. Mortgage of July 1, 1902.
- 53,033,000 for acquiring or retiring bonds of constituent companies.
- 29,619,000 as collateral for loans (to be returned to the Trustee when no longer required for such purpose, but reissuable for the purposes for which remaining bonds may be issued under Section 6 of Article 2 of the Mortgage).
- 1,350,000 to reimburse the company for the cost of \$625,000 Coney Island and Brooklyn Railroad Co. Consolidated Mortgage bonds, \$650,000 Sea Beach Railway Co. Consolidated

Mortgage bonds, and \$200,000 Brooklyn City Railroad Co. 1st and Refunding Mortgage Bonds.

31,377,000 for new properties, additions and improvements.

Total, \$150,000,000

RAPID TRANSIT PROGRESS UNDER CITY CONTRACTS.

Two of the tracks in that portion of the Broadway Subway between Canal Street and Union Square, together with the connecting tracks over the Manhattan Bridge and through the Canal Street Subway, were placed in operation on September 4, 1917, and on January 5, 1918, operation was begun on all four tracks between Rector Street and Times Square. The result of this operation has been satisfactory in respect to additional revenue, but unsatisfactory in respect to our ability to care properly for the traffic offered. This latter result is due partly to the incomplete stations and inadequate switching facilities as the subway was turned over to us, but chiefly to the great volume of transfer traffic from the Williamsburg Bridge Elevated lines on account of passengers desiring to take advantage of the longer ride in Manhattan without the payment of additional fare. This condition has brought to the Broadway Subway through the single Canal Street gateway a volume of traffic beyond the proper capacity of such gateway—resulting in tremendous congestion, considerable confusion and much discomfort, besides unduly crowding the cars operated in the Broadway Subway. The Dual System plans do not contemplate any such concentration of traffic. They require the construction by the city of:

- 1—The 14th Street-Eastern Subway, providing a direct approach to Manhattan for traffic originating in the northern and eastern sections of our Brooklyn and adjacent Queens territory;
- 2—The Montague Street-East River Tunnel, affording a direct connection from the southerly and Flatbush sections of Brooklyn with the Broadway Subway at the Battery;
- 3—An extension of the Centre Street Loop through Nassau and Broad Streets, Manhattan, to the Battery (thus relieving the Broadway Subway south of Canal Street of southbound Brooklyn transfer passengers reaching Manhattan via the Williamsburgh Bridge, and furnishing, with the Montague Street tunnel, a convenient downtown loop in Manhattan for our Brooklyn patrons);
- 4—A direct tunnel connection between the Broadway Subway and Elevated lines in Queens.

Until these connecting lines are in operation our inability to care properly for the business in the Broadway Subway or on the existing tributary lines will continue. It now seems reasonable to expect that the Queens Borough Tunnel and the Montague Street Tunnel will be ready for operation early in 1919, but the completion of the 14th-Street-Eastern Line is still remote, and no contract has yet been let for the extension of the Centre Street Loop Subway southerly through Nassau and Broad Streets.

Operation over the city's new West End elevated line was extended to Coney Island on July 21, 1917.

New steel cars were placed in operation on the Broadway Elevated, Brooklyn, on January 9, 1918.

The Jamaica Avenue Elevated Line was substantially completed and operation thereover was extended from Richmond Hill to Jamaica on July 2, 1918.

The new yard at East 105th Street, Canarsie Line, was placed in operation October 26, 1917.

The elevated Culver Line (under construction by the city) will probably be open for operation as far south as Avenue X, within the present fiscal year.

The connection of the Brighton Beach Line with the city subway will not be available until the connecting subways are completed, and this will probably not be until the spring of 1919.

The remaining 100 subway cars, to complete the total of 600 originally contemplated, were contracted for during the fiscal year.

The Coney Island Terminal work, Myrtle Avenue third tracking and the East New York construction have been delayed owing to prevailing labor and material conditions, but will probably be substantially completed during the present calendar year.

In connection with the equipment of rapid transit lines a temporary substation at Canal Street and Broadway has been completely installed and placed in operation (the capacity of station being 8,000 K.W.); equipment has been installed in the new South Sixth Street Substation and placed in operation (the capacity being 12,000 K.W.); the new Ridgewood Substation building was completed and equipment is now being installed therein; and the electric work on rapid transit lines has progressed satisfactorily.

Contracts remaining to be let to complete the equipment of construction program, as required of the New York Municipal Railway Corporation under Contract No. 4 and the Related Certificates, consist substantially of the following:

- Completion of Fulton Street third-tracking from Nostrand Avenue to Brooklyn Bridge (except a portion of the steel which has been ordered)—all of which is awaiting decision of the Public Service Commission;
- Line equipment and signals on the 14th Street-Eastern Line, Queens Borough Tunnel, Montague Street Tunnel and Brighton Beach Connection (awaiting further progress in construction by the city);
- The connection between the Culver Line and Coney Island Terminal;
- Reconstruction of Broadway Elevated Line between East New York and Jamaica Avenue;
- Increase in Yard and Shop facilities at 36th Street;
- An additional Sub-station.

RESULTS OF OPERATIONS UNDER JOINT ARRANGEMENT WITH CITY.

The results of operations of rapid transit lines under contract with the city continue to be satisfactory, considering that only a portion of the Broadway Subway has been completed, and that as yet it has no through

track connections with Brooklyn and Queens, except in the Canal Street Subway. For the fiscal year the passenger revenue from the rapid transit lines increased \$1,584,970; operating expenses, maintenance, depreciation, taxes and rentals increased \$1,284,124, and net revenue (applicable to interest on new investment) increased \$400,000.

Since the beginning of the pooling arrangement with the city on August 4, 1913, the operating company has earned in full its first preferential of \$3,500,000 per annum, and \$2,104,296 towards its second preferential, leaving \$1,443,027 to be made up out of future earnings.

The table of joint operation is as follows:

RESULT OF OPERATIONS OF NEW YORK CONSOLIDATED RAILROAD COMPANY, LESSEE, UNDER THE PROVISIONS OF CONTRACT NO. 4, DATED MARCH 19, 1913, BETWEEN THE NEW YORK MUNICIPAL RAILWAY CORPORATION AND THE CITY OF NEW YORK

	Year ending June 30, 1918	For the period August 4, 1913, to June 30, 1918
REVENUE:		
Passenger Revenue	\$12,685,497.35	\$49,513,168.93
Chartered Cars and Misc. Transp. Revenue	680.35	4,766.07
Advertising	167,665.58	496,541.35
Other Car and Station Privileges	145,242.03	374,132.49
Rent of Buildings and Other Property	20,287.97	120,663.53
Rent of Tracks and Terminals	10,428.99	142,564.80
Miscellaneous	27,603.82	71,918.59
Total	\$13,057,406.09	\$50,723,755.76
DEDUCTIONS:		
Rentals	\$67,400.00	\$374,206.66
Taxes	777,325.20	2,993,139.37
Operating Expenses, exclusive of Maintenance	5,497,760.12	20,472,959.27
Maintenance Fund	1,563,576.27	6,079,237.55
Depreciation Fund	390,894.07	1,519,809.34
Company's First Preferential	3,500,000.00	17,180,107.51
Total	\$11,796,955.66	\$48,619,459.70
Net over First Preferential	\$1,260,450.43	\$2,104,296.06
 Company's Second Preferential as per Engineer's Determination of Cost	 \$981,726.47	 \$2,723,130.70
Reserve in respect of lines in operation—anticipating Chief Engineer's Determination of Cost	684,474.93	824,193.11
Total Second Preferential	\$1,666,201.40	\$3,547,323.81
DEFICIT* IN COMPANY'S PREFERENTIAL:	\$405,750.97	\$1,443,027.75
INTEREST† PAID BY CITY ON ITS COST OF CONSTRUCTION OF PROPERTY PLACED IN OPERATION PLUS SINKING FUND AT RATE OF 1 PER CENT PER ANNUM	\$1,428,609.98	\$4,985,854.37
TOTAL DEFICIT	\$1,834,360.95	\$6,428,882.12

* To be made good from future net income before payment of City's interest and Sinking Fund charges.

† Deficit in City's charges during temporary operation to be added to the Cost of Construction of City Owned Lines, but after "initial" operation is chargeable to the Tax Budget.

SURFACE LINE RECEIPTS.

The passenger earnings on the surface lines fell off during the year, as compared with the preceding year, \$565,851. While part of this decrease may be attributed to the competition of new rapid transit lines, any influence in this direction should have been overcome by the normal increase in traffic. It is quite evident from an analysis of the receipts that the principal cause of diminishing revenue was the inability, on account of the shortage of men, to operate the full complement of cars. The reduction in service would have been greater had it not been for the employment of women as conductors. Moreover, the great number of men leaving the service of the system on account of the war has necessitated the employment of many new men whose qualifications for their duties have been below the standard previously set, and either in fares not collected, or, if collected, not accounted for, or in transfer frauds, the operating companies have not received the revenue to which they were entitled. This evil can be overcome to the extent possible under prevailing conditions by attracting better men to our service through the offering of higher wages, by more effective methods of inspection (such as lately have been applied), and (with official

approval) by more stringent regulations covering the issue and use of transfers.

ADDITIONS, IMPROVEMENTS AND MAINTENANCE.

The net capital expenditures for additions and improvements aggregated for the fiscal year \$8,669,393.78, of which \$8,518,566.05 was expended by the New York Municipal Railway Corporation on rapid transit lines pursuant to the provisions of its contract with the city, the total of such expenditures to June 30, 1918, being \$58,499,877.37, divided, subject to redistribution as to certain classifications, as follows:

On account of Contribution to City Owned Lines	\$11,160,501.82
On account of Equipment of City Owned Lines	11,245,213.43
On account of Additions, Extensions and Improvements of Existing Railroads	36,094,162.12

Less than half of this expenditure represented property in operation during the year.

The expenditures for maintenance of way and structure and of equipment aggregated \$5,113,323.97—an increase of \$111,686.64 over the preceding year.

WOMEN IN STREET RAILROAD WORK.

In common with other railroad systems our companies have found it necessary to employ large numbers of women to do work formerly undertaken by men. While some mistakes have been made in selection, such as would naturally occur at the inception of any experiment so radical, it must be said for the great majority of women who have sought these new occupations that they have shown themselves to be efficient, faithful and above reproach. There are approximately 576 women now employed as guards on the subway and elevated trains; 252 as conductors on surface lines; 120 in light shop work, and 173 as car cleaners and porters. For a great many years women have been employed as ticket agents, and we have 1,150 now acting in that capacity. The employment of women has presented some new problems, particularly with reference to suitable accommodations at depots and shops, and in respect to medical and moral supervision, and these problems, requiring necessarily some experience and time, are being satisfactorily solved. In no class of work in which women are engaged do the duties require unusual physical effort. There is no discrimination against them in the matter of compensation, and the wages paid are considerably in excess of what similar women have heretofore received or been able to get in their previous occupations. To many of them such occupation has been a great boon, for it enables them to support themselves and their families, while husbands or other family wage earners are fighting for our country across the Atlantic. Had it not been for the readiness of women to fill these places street railroad service would have been much more seriously handicapped during the past year.

INCREASE IN EMPLOYEES' WAGES.

At various times during the year it has been necessary, in order to retain the services of experienced employees and to meet prevailing conditions, to increase wages in the various departments of the system. The increase involving the greatest amount of money was made after the close of the fiscal year (effective August 2, 1918) to the employees of the transportation departments, and will cost in excess of a million dollars a year. Until normal conditions were upset by the war our system had in its employ a larger proportion of men tried by years of experience than most railroad systems. The men have been generally satisfied with the conditions of employment, have continuously shared the prosperity of the company, and the opportunity of steady jobs, promotion from time to time based upon merit and fair treatment, have given us an unusually loyal and capable lot of men. Street railroads cannot expect to compete in wage payments with the temporary conditions attaching to war industries, but they can expect, by offering permanency of occupation and opportunity for advancement, to hold and invite the employment of those who are thinking further ahead for their welfare than the period of this war. In granting the increase the directors felt it to be their duty both to the public and to the property to make every effort possible to preserve the valuable asset which both the company and the public possess in the large proportion of tried men in its service. They also believe that the public is fairminded enough to appreciate that in order to pay these higher rates of wages the company must have more revenue and while they would have preferred to postpone a further increase in wages until a higher average unit of fare should be established, they felt that they could rely on the assistance of both public officials and patrons in maintaining this higher standard of wage by assenting to a higher rate of fare.

RESERVE ACCOUNTS.

Reserve accounts have been increased during the year as follows:

Fire Insurance	\$62,581.14
Amortization of Capital, etc.	786,293.56
Employer's Liability	55,952.35
Total	\$904,827.05

As against these increases the following charges have been made:

Retired Property Adjustments, etc., to the extent of	\$120,549.99
And Payments on account of Employer's Liability, in the sum of	16,320.95
Total	136,870.94

leaving a net increase in Reserves for the year of

Respectfully submitted,

T. S. WILLIAMS, President.

Financial and Construction

Railway Financial News

ATCHISON, TOPEKA & SANTA FE.—See editorial comments elsewhere in this issue.

BROOKLYN RAPID TRANSIT.—See editorial comments elsewhere in this issue.

DENVER & SALT LAKE.—The Railroad Administration has agreed to take over the operation of this road and to pay the standard basis of compensation. One-half of the cost of increased wages since January 1 is to be met by the government and one-half by the railroad.

LEHIGH VALLEY.—The First National Bank and Drexel & Co., of Philadelphia, have purchased \$15,000,000 ten-year 6 per cent collateral trust bonds of the Lehigh Valley. This is the first financing done by this road since April, 1916, when Drexel & Co. bought an issue of \$10,697,000 of its 4½ per cent general consolidated mortgage bonds.

MISSOURI, KANSAS & TEXAS.—Receiver's certificates to the amount of \$2,241,000 matured on August 15, but Receiver C. E. Schaff was able only to meet the interest and was obliged to ask holders of the certificates for an extension of six months. The receiver's certificates which were due are the balance of an issue of \$3,000,000 bearing interest at the rate of 5 per cent, and having a maturity of 18 months. At the office of the M., K. & T. it was said that a large majority of the holders of receiver's certificates had agreed to the six months' extension at 6 per cent. The funds required to meet the interest payment were the proceeds of the rental payments made by the Federal Railroad Administration. A month ago there matured \$34,000 of 5 per cent equipment trust certificates of the Missouri, Kansas & Texas of Texas. The receiver of the road did not have funds at the time, but no permanent default was entered inasmuch as a belated payment by the Railroad Administration made it possible for the road to meet its obligations on August 8.

RHODE ISLAND COMPANY.—See New York, New Haven & Hartford.

Railway Construction

CENTRAL NEW ENGLAND.—This company is building at Maybrook, N. Y., a ten-stall brick enginehouse to cost about \$85,000. The contractor is the H. Wales Lines Company of Meriden, Conn.

CHICAGO, BURLINGTON & QUINCY.—Under-passes are now under construction at Forty-eighth and Sixtieth avenues, Chicago. At the former point a single track, 50-ft. steel girder span is being erected by the Wells Brothers Construction Company, Chicago. The Sixtieth avenue viaduct, a double track, 80-ft. reinforced concrete structure, is being constructed by the Stresenreuter-Cotton Company, Chicago.

ELGIN, JOLIET & EASTERN.—This company has awarded a contract to the Wm. Graver Tank Works, Chicago, for the installation of Graver type "K" water treating plants with quartz filters and with a capacity of 15,000 gals. per hour, at Spaulding, Ill., and Frankfort.

THE PENNSYLVANIA EASTERN LINES has awarded a contract to the Roberts & Schaefer Company, Chicago, for the construction of a 1,000-ton reinforced concrete automatic electric locomotive coaling plant and an R & S gravity sand plant at Youngwood, Pa.; also a similar plant of 300-ton capacity at Perryville, Md.

ACCIDENTS TO WORKMEN in the use of grinding wheels and while working on scaffolds are the subjects of the two latest "Safe Practices" pamphlets of the National Safety Council.

Railway Officers

Railroad Administration

Regional

H. R. Safford, chief engineer of the Grand Trunk, has been appointed engineering assistant, under the United States Railroad Administration, Central Western Region, with office at Chicago.

Frank J. Whiteman, superintendent of safety of the St. Louis-San Francisco, has resigned and has been appointed supervisor of safety for the Southwestern Region, with headquarters at St. Louis.

E. C. Keenan, general superintendent of telegraph of the New York Central Lines, has been appointed general superintendent of telegraph and telephone of the Eastern Region, with office at New York City.

E. A. Chenery, superintendent of telegraph of the Missouri Pacific, with headquarters at St. Louis, Mo., has been appointed superintendent of telegraph for all lines under federal control in the Southwestern region, effective August 22.

H. E. Mack, manager of mail traffic for the Missouri Pacific, the International & Great Northern, the St. Louis-Southwestern and the St. Louis-Southwestern of Texas, with headquarters at St. Louis, Mo., has been appointed general supervisor of mail traffic for all lines under federal control in the Southwestern region, effective August 22.

T. T. Maxey, advertising agent of the Chicago, Burlington & Quincy for the past eight years, with headquarters at Chicago, has been appointed representative of the Central Western region on the Bureau of Suggestions, Complaints and Public Relations, of the Railroad Administration, which is now in the process of organization. Mr. Maxey's new headquarters will be in Washington, D. C.

Federal and General Managers

A. DeBernardi, general manager of the Kansas City, Mexico & Orient, has been appointed general manager, under the Federal Administration, with office at Wichita, Kan.

H. S. Garrett, second vice-president and general attorney of the Kansas City, Mexico & Orient Railway of Texas, has been appointed general attorney under the Federal Administration, with office at San Angelo, Texas.

D. F. Kirkland, general manager of the Georgia & Florida, has been appointed terminal manager at Atlanta, Ga., with authority over the terminals of all lines (except the Atlanta Terminal Company) effective September 1.

B. R. Pollock, federal manager of the Boston & Maine, the Montpelier & Wells River, the Barre & Chelsea and the St. Johnsbury & Lake Champlain, announces that beginning August 22, all general officers of the Boston & Maine will have their authority extended over the three smaller roads.

Neal S. Doran, auditor of the Kansas City, Mexico & Orient, with office at Kansas City, Mo., has been appointed auditor under the Federal Administration, with office at Wichita, Kan. **E. H. Rowley** has been appointed acting federal treasurer of the same road, with office at Wichita, Kan.

E. T. Lamb, federal manager of the Atlanta, Birmingham & Atlantic, the Atlanta & West Point, the Western Railway of Alabama, the Charleston & Western Carolina and the Frisco lines east of the Mississippi river, with headquarters at Atlanta, Ga., has been appointed federal manager also of the Atlanta Terminal Company.

J. A. Edson, federal manager of the Kansas City Southern and other lines, has had his authority extended over the Kansas City, Mexico & Orient, and announces that **J. F. Holden**, traffic manager; **J. M. Weir**, chief engineer, and **W. S.**

Atkinson, purchasing agent, have also had their authority similarly extended, with headquarters at Kansas City, Mo.

Operating

C. M. Scott, superintendent of the Phoenix division of the Arizona Eastern, at Phoenix, Ariz., has been appointed general manager, with office at Tucson, Ariz.

E. B. McClure, division superintendent of the Chicago & North Western, at Sioux City, Ia., has been appointed terminal manager, in charge of operation of the Sioux City Terminals.

J. J. Corcoran, superintendent on the Pere Marquette, at Detroit, has been appointed general superintendent of the Grand Trunk, Western Lines, with headquarters at Chicago, effective August 26.

T. J. Foley, vice-president of the Illinois Central at Chicago, has been appointed general manager. **A. E. Clift**, general manager at Chicago, has been appointed assistant general manager with the same headquarters, effective August 20.

J. J. Mantell, general superintendent of the Erie, with office at New York, has been appointed terminal manager in charge of all railroad terminals, on the west side of the harbor from Greenville (Pennsylvania terminal) on the south to Edgewater (New York, Susquehanna & Western) on the north.

W. S. Martin, vice-president of the Memphis Union Station Company, with office at Memphis, Tenn., has been appointed general superintendent for the Arkansas & Memphis Railroad Bridge and Terminal, the Memphis Union Station and the Union Railroad of Memphis, with authority over all departments and reporting to the regional director.

E. L. Mackenroth has been appointed assistant superintendent of telegraph of the Northern Pacific, at Tacoma, Wash., succeeding **E. E. Dildine**, promoted, effective August 1. **J. F. Coleman** has been appointed acting assistant to the general superintendent of the western district at Tacoma, Wash., succeeding **L. F. Newton**, who has been granted a leave of absence to enter the service of the United States Railroad Administration.

Joseph C. Peters, whose appointment as superintendent of the Philadelphia division of the Philadelphia & Reading, was noticed in the *Railway Age* of August 2, has been in the service of the Reading 38 years, having begun as a messenger at Philadelphia in November, 1880. He became a telegraph operator in 1881, a signalman in 1885 and was promoted to yardmaster at Wayne Junction in October, 1887. After successive promotions in this service he became train despatcher in March 1890, and on January 1, 1902, he was promoted to trainmaster at Philadelphia. This position he held until his appointment as superintendent on June 1, last.

E. E. Lillie, superintendent of the Spokane & Inland Empire, at Spokane, Wash., has been appointed assistant general manager of the Spokane, Portland & Seattle, the Oregon Trunk and the Oregon Electric, with headquarters at Portland, Oregon. Mr. Lillie entered the railroad service on the Great Northern in 1888 and was continuously with that company until 1907, as operator, despatcher, chief despatcher and assistant superintendent, except for a period of one year, between 1902 and 1903, when he went to the Choctaw, Oklahoma & Gulf, now a part of the Chicago, Rock Island & Pacific, as trainmaster at Little Rock, Ark. From 1908 to 1911, he was superintendent of car service and telegraph of the Spokane, Portland & Seattle, at Portland, Ore., and in 1911, he was appointed superintendent of the Spokane & Inland Empire, which position he held until his appointment as assistant general manager, as mentioned above.

Financial, Legal and Accounting

F. C. Marshall, treasurer of the Duluth & Iron Range, has been appointed acting federal treasurer, with office at Duluth, Minn.

Joseph Seifert, assistant auditor of the Duluth, Missabe & Northern, has been appointed federal auditor, with office at Duluth, Minn.

J. W. Kempton, second assistant treasurer of the Duluth,

Missabe & Northern, has been appointed acting federal treasurer, with office at Duluth, Minn.

J. A. Quinn has been appointed auditor of the St. Joseph & Grand Island, with headquarters at St. Joseph, Mo., succeeding **F. W. Meyer**, transferred.

G. H. Steinberg, treasurer of the Terminal Railroad Association of St. Louis, has also been appointed acting federal treasurer of the Alton & Southern, the St. Louis & O'Fallon, the St. Louis National Stock Yards, the East St. Louis National Stock Yards, the St. Louis & Belleville Electric and the St. Louis, Troy & Eastern, effective August 22.

W. S. Horton, general attorney on the Illinois Central, with headquarters at Chicago, has been appointed general solicitor with the same headquarters. **W. D. Beymer**, controller, with headquarters at Chicago, has been appointed federal auditor with the same headquarters. **O. F. Nau**, local treasurer, at Chicago, has been appointed acting federal treasurer with the same headquarters, effective August 20.

Harry D. Foster, whose appointment as general auditor of the Chicago, Burlington & Quincy, and the Quincy, Omaha & Kansas City, with headquarters at Chicago, succeeding **C. I. Sturgis**, was announced in the *Railway Age* of August 16, was born at Downer's Grove, Ill., on October 24, 1866. Mr. Foster began railway work with the Chicago, Burlington & Quincy, on June 8, 1882, and has since been employed continuously in the auditing department of that system. From July 2, 1892, to January 1, 1896, he was ticket auditor on the lines in Missouri. On the latter date he was promoted to auditor of freight and ticket accounts of the same lines at St. Joseph, Mo., where he remained for the next seven years, when he became auditor of expenditures of the lines east of the Missouri river, with headquarters at Chicago. From May 7, 1906, to March 1, 1910, he was assistant auditor of the lines west of the Missouri river, with headquarters at Omaha, Neb. On the latter date he was promoted to assistant general auditor of the system at Chicago, which position he held until his appointment as general auditor under the United States Railroad Administration.

Traffic

G. F. Stump has been appointed assistant general freight agent of the Long Island Railroad, with office at New York City.

C. P. Morse has been appointed a member of the committee of freight traffic control, Ohio River Gateways, with headquarters at Cincinnati, in place of **George Krause**, transferred.

F. B. Bowes, vice-president in charge of traffic on the Illinois Central, with headquarters at Chicago, has been appointed traffic manager, with the same headquarters, effective August 20.

C. W. Kieswetter, assistant general freight agent of the Duluth, Missabe & Northern, has been appointed general freight and passenger agent in place of **J. B. Hanson**, with office at Duluth, Minn.

T. Thompson, secretary of the Western Passenger Association, which recently went out of existence, has been appointed secretary of the Western Passenger Traffic Committee, with headquarters at Chicago.

Engineering and Rolling Stock

W. J. Tapp has been appointed fuel supervisor of the Denver & Rio Grande, with headquarters at Denver, Colo., effective August 19.

R. B. Shepard, Jr., office engineer of the Atlantic Coast Line, with office at Wilmington, N. C., has been appointed valuation engineer, vice **D. W. Gross**, resigned.

Maurice Coburn, principal assistant engineer on the Pennsylvania Lines West, with office at St. Louis, has been appointed supervising engineer, with office at Indianapolis, Ind. The headquarters of the St. Louis system of the Pennsylvania has been moved to Indianapolis, and to this system the Administration has added the Indianapolis Terminal and the Louisville divisions.

A. E. Calkins, assistant superintendent of rolling stock of the New York Central Lines East, has been appointed engineer of rolling stock of the New York Central Lines, with office at New York.

C. N. Bainbridge has been appointed assistant engineer in charge of bridge inspection and bridge erection on the Chicago, Milwaukee & St. Paul, lines east of Moberg, S. D., succeeding **E. S. Meloy**, deceased.

D. M. Case, signal and electrical engineer of the Southern, lines west, with headquarters at Cincinnati, Ohio, has had his jurisdiction extended to include the Georgia Southern & Florida and the Alabama & Vicksburg.

A. R. Cook, principal assistant engineer of the Northern Pacific, with office at Tacoma, Wash., has been appointed engineer of maintenance of way, for the lines west of Paradise, in place of **L. M. Perkins**, transferred.

W. A. Clark, chief engineer of the Duluth & Iron Range, has been appointed chief engineer of that road and the Duluth, Missabe & Northern, succeeding **H. L. Dresser** on the last named road; office at Duluth, Minn.

A. B. Himes, assistant engineer in the signal department of the Baltimore & Ohio, at Baltimore, Md., has been appointed assistant engineer of signals, with office at Cincinnati, Ohio. **G. A. Motry**, signal inspector at Baltimore, Md., succeeds Mr. Himes, and **Thomas L. Cannon**, signal inspector, at Cumberland, Md., succeeds Mr. Motry.

F. L. Thompson, whose appointment as chief engineer of the Illinois Central was noticed last week, was educated at the University of Illinois, graduating from the civil engineering course in 1896. He entered the service of the Illinois Central on June 18 of the same year, as a chainman on the reconstruction and lowering of the tracks along the lake front at Chicago, and later was rodman and inspector on concrete work. In the early part of the following year he was engaged as a rodman at Vicksburg, Miss., on the work of changing a 700-ft. tunnel to an open cut. He also had charge of the building of a concrete arch and large freight house at the same place. After the completion of that work he was rodman and assistant engineer on surveys and on grade reduction work from Fulton, Ky., to Memphis, Tenn. From January, 1900, to August of the following year, he was assistant engineer in charge of grade reduction and double track work between Wickliffe, Ky., and Fulton. For the next six months, Mr. Thompson was in charge of the double track and grade reduction work from Irvington, Ill., to Carbondale. From February, 1902, to February, 1903, he was assistant engineer in the chief engineer's office at Chicago. The following eight months he was acting roadmaster of the Chicago division, and was then transferred to the Louisville division, as roadmaster, where he remained until January, 1907, at which time he was appointed assistant engineer of bridges. On July 1, 1910, he was promoted to engineer of bridges and buildings, and on April 1, 1913, was appointed engineer of construction, and served in this capacity for the following two years. On April 1, 1914, he became assistant chief engineer, which position he held until his promotion to chief engineer as mentioned above.



F. L. Thompson

Oscar E. Wolden, assistant fuel supervisor of the Minneapolis, St. Paul & Sault Ste. Marie, at Minneapolis, Minn., has been appointed acting fuel supervisor, succeeding **L. R. Pyle**, whose appointment as supervisor of the fuel conserva-

tion section for the Central Western region was announced in the *Railway Age* on August 9. **Harry W. Maurer** has been appointed assistant superintendent of the car department, with headquarters at Minneapolis, Minn.

J. M. Sills, district engineer on the St. Louis-San Francisco, at Springfield, Mo., has been appointed assistant chief engineer, with headquarters at St. Louis, Mo. **H. B. Barry**, district engineer at Memphis, Tenn., has been transferred to Springfield. **D. E. Gelwix**, assistant engineer, with headquarters at Springfield, Mo., has been appointed district engineer at the same place.

E. T. Irving, division engineer on the Grand Trunk, Western lines, with headquarters at Chicago, has been promoted to chief engineer of the Western lines, with headquarters at Detroit, Mich. **W. H. Sample**, superintendent of motive power of the Grand Trunk, at Montreal, Que., has been transferred to the western lines, with headquarters at Detroit, Mich., effective August 26.

Purchasing

Ralph P. Moore, purchasing agent of the Duluth & Iron Range, has been appointed purchasing agent of that road and the Duluth, Missabe & Northern, succeeding on the latter road **H. Greenfield**; office at Duluth, Minn.

Corporate

Operating

H. H. Hill, auditor of the Ocilla Southern, with office at Ocilla, Ga., has been appointed general manager for receivers in place of **J. F. Gray**, resigned. Mr. Hill will continue to serve as auditor.

William Harry Bunney, whose appointment as general superintendent of the Montana, Wyoming & Southern, with headquarters at Belfry, Mont., was announced in the *Railway Age* on July 26, was previously employed by the Northern Pacific as chief clerk to the general superintendent at Livingston, Mont. Mr. Bunney entered the service of the Northern Pacific on June 28, 1899 as engine wiper and call boy. Later he was promoted to stenographer, chief clerk to the assistant general superintendent, assistant chief clerk to the general manager and chief clerk to the general superintendent, at Livingston, which position he held until he resigned to become general superintendent of the Montana, Wyoming & Southern, as mentioned above.

Traffic

W. B. Lanigan, assistant freight traffic manager of the Canadian Pacific, western lines, with office at Winnipeg, has been promoted to freight traffic manager, with office at Montreal, in charge of freight traffic on all the company's lines, succeeding **W. R. MacInnes**, promoted to vice-president.

George C. Martin, whose appointment as general traffic manager of the Toronto, Hamilton & Buffalo, was noticed in the *Railway Age* of August 23, was born at Creemore, Ont., on January 2, 1866, and entered the railway service in 1882 on the Northern & Northwestern Railway. His first position was assistant to the agent, at Thornbury, Ont. A year later he went to the Canadian Pacific and was a telegraph operator on construction, between Calgary and Medicine Hat. In 1884 he went to the Grand Trunk and was station agent at Caldwell Junction, and later at other places. In December, 1897, he went to the Toronto, Hamilton & Buffalo as chief clerk in the traffic department. On December 1, 1909, he was appointed assistant general freight and passenger agent, and three years later was promoted to general freight and passenger agent, which position he held until his promotion in the present month.

Engineering and Rolling Stock

F. T. Hatch, chief engineer maintenance of way of the Pennsylvania Lines, St. Louis System, with headquarters at St. Louis, remains with the corporation as consulting engineer and he will have charge of valuation, with office at St. Louis.